Railway Age

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Attention Focused on Operation

OPERATING results secured in recent months prove that more and more railroad men are giving attention to problems of operation, and this tendency, which should be encouraged to the fullest possible extent, was plainly evidenced at the mechanical association conventions held in Chicago during the past month. The general foremen discussed the question of what they could do to help obtain more ton-miles per shop man-hour. One of the prominent speakers at the tool foremen's meeting explained the transportation results secured in the first nine months of 1925 and called on the tool men to do their part in securing still better results by providing the shopmen with a higher standard of tools which will enable cars and locomotives to be repaired in the shops in less time than formerly and be turned out in better condition to operate without service failures. The traveling engineers occupy a strategic position from which to influence train operation and it is significant that four out of the six reports presented at the Traveling Engineers' Convention had a direct bearing on operation. In fact, some phase of operation was touched upon in the discussion of every report. It will also be recalled that the International Railway Fuel Association in its convention last May had an "Operating Day" devoted entirely to the influence of fuel on operation. The association was addressed by A. R. Ayers, assistant general manager of the New York, Chicago & St. Louis; B. J. Schwendt, superintendent of signals, New York Central Lines; G. M. Basford, president of the G. M. Basford Company, and others, all of whom stressed the vital importance of getting trains over the road. If the various railroad associations will continue this work and in particular delve into and help remedy those conditions which now delay traffic movement, still further improvements in operation are a certainty.

More Coal Buying Needed

THE public was assured by railroad men and coal men when the anthracite strike began on September 1 that there was no danger of a coal shortage if the public would promptly increase its purchases of bituminous coal in order that it might be supplied in place of anthracite. The public evidently has heeded the assurance that there is no danger of a coal shortage, but disregarded the qualifying advice with which it was accompanied. Although the mining and transportation of anthracite almost absolutely stopped when the strike began, the production and shipment of bituminous coal have been less since then than they were in the weeks immediately preceding. In the three weeks ending on August 29 the average weekly production of bituminous was 10,661,000 tons and of anthracite 2,144,000 tons, a total average weekly production of 12,805,000 tons. The strike began on September 1. In the three weeks ended on September 19 the production of bituminous averaged 10,558,000 tons and that of anthracite was virtually nil. The storage supplies of anthracite probably were unusually large when the strike began, and it is evident that many of those who are accustomed to using it have been postponing the purchase of bituminous in the hope that the strike would soon end and they would be able to get enough anthracite. While, however, in the first eight months of this year the production of anthracite was about two million tons greater than in the corresponding part of last year, the result of the complete suspension of mining was, that the total production up to September 19 of this year was about four million tons less than last year. Furthermore, the amount of bituminous in storage undoubtedly is less than it was a year ago. In the week ended September 19, 1924, the amount of bituminous shipped was 10,856,000 tons and the amount of anthracite 1,851,000 tons, a total of more than 12,000,000 tons. In the corresponding week of this year the total amount of anthracite and bituminous shipped was only 10,876,000 tons. The current small shipments are due to the fact that the public is not buying enough bituminous to offset the cessation of anthracite mining. If this continues much longer the public will awaken, when cold weather comes, to a realization of the fact that there is a shortage of the available supply of coal. It will then rush into the market, and the result may be that it will congest the railways and abnormally boost the price of coal. The assurances given when the anthracite strike began that there was no apparent danger of a coal shortage are becoming subject to a large discount because the public is buying in a way that directly tends to cause a shortage.

Do Figures Tell the Story?

STATISTICS afford a convenient yardstick for the measurement of the efficiency of many operations on a railroad. They set up standards by which comparisons can be made and success or failure located. And by no means have we come to the end of the possibilities for utilizing them to bring out important facts about railroad operations. There is at least one phase of railroad work, however, where a great deal of caution is needed in their use—where figures now available or likely to become accessible are rather more than likely to lead us astray, if we depend upon them alone. That is in gaging the effectiveness of this or that method of dealing with the human relations problem. We have called attention to this fact before in these pages. The total effect of a labor policy does not show itself from month to month. A certain policy, for instance, which might be highly effective in increasing efficiency temporarily might, even while the monthly records were showing surpassing results, be damming up a flood of discontent eventually to burst forth and destroy in a brief period the good record of months or even years. Another plan of dealing with employees, while not nearly so spectacular in the monthly figures,

might well be progressing on such a solid basis that in the end it would prove the more profitable. The point is that no railroad management which is endeavoring to improve its employee relations situation should gage the success of its work entirely by the figures of improved output with lower cost. Greater efficiency is desirable and may be expected to follow the study and application of improved personnel methods. It is not safe, however, to engage in this work with savings in labor cost per unit of output alone in view. The purpose of employee relations work should be to secure a smoother organization, happier and more contented employees and officers, the elimination of needless waste and better service to the public. The president of one of our greatest railroad systems a year or so ago declared that he felt in his position responsible not only to his stockholders but to his employees and the public as well. This is the viewpoint which must be carried into human relations work if it is to be successful. One which looks only for the results which can be shown by figures may attain little else but figures—and even these not for a great while.

Preserving the Human Touch

THE larger an enterprise becomes the more its operations must be standardized and rules substituted for absolute freedom of action on the part of those employed in it. This is an obvious fact, yet there are few people who, recognizing it, do not at the same time deplore the necessity for the substitution of inflexible regulations for what may be called the "human touch." And it is a question whether it is necessary to preserve all the customary regulations as stringently as sometimes they are. If operation under fixed rules is a necessary evil, should it not be kept within reasonable bounds? Not long ago a young woman residing in the suburbs of one of our great cities found it necessary to go out to her home on a train late at night. Her station is located in a sparsely settled section and her home, which is near the track, is almost a mile from this station. She had traveled on this suburban line for a number of years and was, consequently, known to the conductor. He also knew where her house was located and the long walk down the dark lane which was necessary to reach it. As the train neared the station he noticed that two men of a rather disreputable, not to say suspicious, appearance were also destined for the same point and that they and the young woman were the only passengers who were to alight there—not a serious situation, but one likely to cause at least some anxiety. The conductor thought quickly. Approaching the young woman he told her the circumstances. "Do not get off at the station," he said. "We will let you off right at your back door." And he made good his promise. Now this was undoubtedly not railroading exactly according to the rules of the game. A train is not a taxicab which can discharge each passenger at his door. However, it was late at night. The train had few passengers and an easy schedule, so no delay resulted. The young woman will have a lasting impression of a railroad which, when conditions demand and permit, can forego regularity for a touch of humanity. We make no attempt to judge whether or not the action of the conductor in this particular case can be defended or not. We do believe, however, that stretching a point now and then for the patrons—if done not too frequently and always with the exercise of good judgment—should go a long way in bringing to the roads the attitude on the part of the public which is so beneficial to all concerned.

Automobiles at Railroad Crossings

AN intelligent motorist who, having his mind on his duty, approaches a railroad crossing at very low speed, is substantially as safe as one who brings his automobile to a full stop. This familiar fact is to be taken as the principal thing explaining why drivers ignore the stop-laws in Virginia and elsewhere. The conditions appear to be about the same throughout the states of Virginia, Tennessee and North Carolina. Two other states, Oklahoma and Georgia, have now put stop-laws on the statute books; but whether they will develop any improvement in practice remains to be seen. In the general neglect, indifference and confusion of purpose everywhere apparent, it is difficult to discern much evidence of actual and constructive value in the various statutes; but it must be that people are being educated to some little extent, despite the lack of positive data on the point; a diminution in the number of fatalities at crossings is actually reported here and there. Two points are to be noted in connection with this recent legislation: (1) in Oklahoma it seems to be very frankly admitted that state and municipal officers shall not be expected to take any definite measures to apprehend and punish violators of the stop-law; that the legislature put the statute on the books simply as a formal warning to motorists of what they ought to do. (2) In Georgia, the legislators recognized the force of the condition stated in the beginning of this paragraph by dividing crossings into two classes, one at which a stop should be made and the other at which the only restriction is that a suitable reduction in speed shall be made. It will be interesting to see what educational effect this Georgia statute may have. It is to be hoped that the press in the several states will succeed in keeping the people stirred up on this point, for none of these stop-laws are free from objectionable crudities, and it is only by a good deal of public discussion that a definite public policy can ever be developed. Without this the legislators will continue to grope in the dark. Uniformity is very desirable throughout the United States and Canada in signs, requirements and practice; in city and country, big railroads and little railroads. To accomplish this the legislatures will have to have a great accession of wisdom.

A Perplexing Problem of Management

DIVISION officers often manifest a lack of sympathy, if not ill-concealed antipathy, for what they consider a too minute supervision of their work by system staff assistants. This was brought out clearly in the discussion of the report on tie renewals at the roadmasters' convention last week at Kansas City. The consensus of opinion expressed was definitely in opposition to the employment of system tie inspectors to supervise the selection of ties for renewal by foremen and roadmasters.

There is considerable justification for the position taken by the local supervisory officers in this regard. Unquestionably no one is better qualified to judge the condition of the ties on any section than a reliable, well-trained foreman. Furthermore, track supervisory officers are keen advocates of the fundamental principle of management—that responsibility presumes a considerable degree of authority. They contend that if they are to be held responsible for the condition of the track on their subdivisions they should be accorded a free hand in the exercise of supervision.

However, in maintaining this position the roadmasters take no account of the fact that a large railway system is a complex machine in which the responsibilities of management impose many highly involved problems. They fail to realize that the absence of some measure of inter-divisional supervision may lead to a wide departure from established standards due to the free play of the personal equation. What one roadmaster may consider a normal condition of ties and rail in track may differ widely from the opinion of some other roadmaster in charge of track carrying a substantially equivalent volume of traffic. It is for this reason that most railroads, even those committed definitely to the divisional form of organization, have developed system maintenance staffs to exercise general supervision over maintenance-of-way matters. In the case of rail, in particular, they have found it highly necessary to review the recommendations of division officers with respect to renewal programs since it is only by the exercise of such supervision that each division can be allotted its equitable share of the new rail under a plan which takes into account all of the conditions imposed.

Division officers may feel that this constitutes an invasion of their prerogatives but it is necessary nevertheless. It is a perplexing problem of management and raises an interesting question as to the greater complexity of such general supervision that will follow the consolidation of railroads into much larger systems than those now operated under one management. It may well receive careful study from those who advocate consolidation as a means of effecting marked economies in railway transportation.

The Dual Nature of Railroad Management

IT is a vitally important fact which is not generally recognized that the management of a railroad has become in the United States a widely different thing from the management of any other kind of business concern, and that in consequence the successful management of a large railroad requires of its officers greater versatility, if not actually a higher order of ability, than the management of any other kind of concern. More general recognition of this fact by both the public and railway officers is needed, because the better the railroad problem is understood and the more squarely it is faced by all concerned the more likely it is to be satisfactorily solved.

The successful management of a large railroad, because of the essential characteristics of the business, requires as great, and probably greater, executive energy and ability as that of any other kind of concern. By executive ability is ordinarily meant the power to formulate sound policies, to select the right men to carry them out and to exercise supervisory authority in such a way as to get them carried out. The chief executive of every business has to do these things if it is to be successfully conducted. A large railroad represents a greater investment, employs more men and earns and spends more money than a large concern of almost any other kind. Its operations extend over a greater area than those of almost any other kind of large concern. These and many other conditions present at least as many, as great and as difficult problems of organization and administration to the executive officers of a railroad as are presented to those of the very largest concerns of other kinds.

The management of a railroad presents, in addition, other problems which are entirely different from those met by the executives of other concerns, and the solution of which requires qualities that are not commonly found combined with what is ordinarily called executive ability and which might almost seem to be incompatible with it. The necessity for the possession and exercise of these qualities is largely created by government regulation, and theoretically public utilities are subject to the same kind of regulation as railways, but in fact the conditions under which public utilities and railroads must be managed and regulated are widely different, and the demands made upon their managers are correspondingly different. The public utility usually is virtually or actually a monopoly, and its officers do not have to co-operate with the officers of competing companies. The public utility usually has a local habitation and many local stockholders, and is affected by the sentiment of only one class of customers and of only one or a few communities. Its rates are based upon the valuation of its own property alone, and no consideration has to be given in fixing them to the valuation of any other property. Its labor problems are mainly its own, and may be settled without direct reference to the way the labor problems of similar public utilities in other communities are settled.

On the other hand, each railroad operates in a territory or territories with other railroads, and must compete with them and also co-operate with them and other railroads throughout the country. Hardly a rate can be made, or a wage be fixed, or a train be put on or taken off, or the schedule of a train changed, without affecting a number of railways or all those in an entire territory. The solution of the problem of equitable and efficient distribution of cars requires co-operation by all the railways. The relations between the railways themselves demand the exercise by their higher officers of qualities not required of executive officers of almost any other kind of business concern. They must confer and agree regarding matters concerning which they have conflicting as well as common interests.

As already indicated, however, it is the influence of government regulation that especially presents to railroad managers problems of a kind which managers of other concerns do not have to meet. Each railroad serves numerous different communities and different classes of patrons. It has no local habitation. Sentiment in one part of its territory may be different from what it is in others. The predominating sentiment of the nation determines how it will be regulated. The same policy of regulation must be applied to numerous railways whose physical, traffic and financial conditions are widely different. If rates are to be based on valuation they must be based on the combined valuations of many properties, although with the same rates different properties will earn quite widely different percentages of net return. It is inevitable that because of the physical and financial differences between the various railways, and because of the differences in the education, experience, environment, and temperament of their officers, there shall be wide differences of opinion among them regarding the extent to which they should co-operate in management; regarding the policies that should be adopted in dealing with labor; regarding the policy of regulation they should favor, and regarding what they should do to create and maintain a public sentiment that will favor a policy of regulation that will enable the roads as a whole and each individual railway to enjoy reasonable prosperity.

The conditions that have been referred to, and many others that might be mentioned, with all of which railway officers are familiar, illustrate why what is ordinarily called executive ability, even though of the highest order, will not alone serve to make private management of our railroads as a whole or of any individual road perma-

nently successful. Something more is vitally required, and that is the ability to harmonize conflicting interests and opinions, to co-operate with respect to matters that seem essentially competitive, and to carry on an interminable controversy regarding regulation so as to show a reluctant public what is to its own true interest and persuade it to adopt and adhere to a policy in conformity with that interest. To make prompt and correct decisions regarding business questions and issue appropriate orders for giving them effect is one thing which every business executive must constantly do. To perform the other functions which existing conditions require of railway officers is an entirely different thing.

The hardest and most important work of a statesman is to get political leaders to agree upon sound public policies and to win public support for them, and unless a man can do these things he is not a real statesman, whatever else he may be. When the problems with which railway executives are confronted are considered as a whole it becomes plain that they demand not only all the qualities of an able business executive, but also all the qualities of an able public man.

It seems desirable to emphasize the dual nature of the work of railway executive officers because they are often criticised for not doing this or that thing that other business men do by persons who overlook the fact that the nature of the railroad business and the regulation to which it is subjected make it impracticable for railway officers to do many things that other business men do. Another reason why the point may well be emphasized is that the necessities imposed upon railroad managements by the difference between their problems and those of other business concerns are not always clearly recognized by railway officers themselves. Prior to the time when government regulation became really effective the most successful railway executives were those who manifested the greatest executive ability of the kind that still gets the best results in most lines of business. Those days are past—probably for ever.

There is as great need as ever for executive ability in the railroad business, but there is greater need than ever before for the kind of ability that can get the railroads to work together regarding operating and traffic matters and regarding policies of regulation, and that can win and hold public favor for them.

Permanent Versus Temporary Construction

THE American railway officer who travels abroad is impressed with the permanence of the railroad construction in Europe, for it stands out in marked contrast with standards in this country. The same contrast prevails to a somewhat less marked degree between the main trunk lines of the east and the newer lines in the western states and provinces in North America. On the one hand, one sees multiple tracks of heavy rail on stone ballast, steel and masonry bridges, well developed terminals and all those facilities which indicate a highly developed transportation system. On the other hand, one sees many single track lines in the west with light rail and little ballast, small buildings of frame construction and timber structures over all but the largest water courses.

These western standards are representative of the newness of the country. They represent the pioneer spirit which made transportation in the east possible three-quarters of a century ago and which has today permitted the vast plains areas to be opened up for settlement and the country to be developed to the point which will provide enough traffic to justify the building of these lines and eventually to warrant their reconstruction on a more permanent and expensive scale.

The transition from the pioneer to the more highly developed stage is going on constantly throughout all parts of the United States and Canada. The newer lines are gradually substituting masonry for timber in their structures, relaying 56, 60 and 65-lb. rail with 85, 90-lb. and heavier sections, replacing sand and cinder ballast with washed gravel and crushed stone and substituting brick and concrete for frame stations. We should not lose sight of the fact, however, that this reconstruction is not confined to the pioneer lines for it is still evident on the eastern lines as well. The Castleton cutoff of the New York Central, the replacement of the Broad street station of the Pennsylvania at Philadelphia, the Clarks Summit-Halsted cutoff of the Lackawanna and the Magnolia cutoff which the Baltimore & Ohio built a few years ago, indicate the improvement which is still warranted on even the most highly developed lines of this country to meet the demands of increasing traffic.

Ours is a growing continent. It is developing rapidly and our railways must and are keeping pace with this development in the newer and more open areas of the west as well as in the more highly developed centers along the Atlantic seaboard. In watching this development and planning for it, we must keep in mind the conditions surrounding it in order to maintain a proper perspective. It is just as great an error to criticize a line in a new country for lack of foresight in building at minimum cost as to criticize a trunk line for extravagance in its more permanent construction. Each has its place in the economic development of the country and while conspicuous examples of waste in both directions are to be found, history has shown that progress as a whole has been in keeping with the development of the areas served.

Bus Competition in a Suburban Zone

THE motor bus is just beginning to invade another locality in which heretofore there has been little competition with the steam railroads—this time it is between the metropolitan section of Northern New Jersey and New York. The great bulk of the passenger traffic in this section is carried by the railroads at commutation rates and there is little danger that the buses will compete for this or that they could handle it if they tried. Instead they make their appeal to single-trip or round-trip passengers who would have to pay full fare on the railroads. And this is the only class of traffic in the suburban zone which is really remunerative to the railroads; the commutation business is handled at rates so low as barely to pay expenses. Consequently, small as the full-rate travel in the territory is when compared with the total volume of business, its loss to the railroads would tend to bring down earnings in far greater proportion.

Only one of the railroads which operates suburban trains into New York from the New Jersey side has a direct entrance to the city proper. The others terminate on the west bank of the Hudson and the passengers have to complete their journey by ferry or by the Hudson tubes. Motor buses, on the contrary, operate right into the city, avoiding the inconvenience and loss of time subsequent to the railroad trip, so it is not unlikely that the

overall time by bus from suburban towns to the heart of the city will average quite as rapid as by train. One of the disadvantages of suburban traffic from the railroad standpoint is its sharp concentration into morning and evening rush periods, making for an uneconomic utilization of crews and equipment. The single-trip, full-rate travel, which tends to come more in the non-rush hours, has therefore been "so much velvet." In England, according to Modern Transport (London), the railways are endeavoring to build up this single-trip business in competition with motor vehicles and to concentrate it further into the non-rush hours; and to this end are offering reduced rates at these hours. Non-rush hour travel in suburban territory resembles excursion business in that it utilizes equipment which would otherwise be idle and, frequently enough, it can be handled with very little extra labor cost by crews which under present arrangements have to be paid a full day's wages for about half a day's work.

If buses should succeed in taking from the railroads the bulk of non-rush hour, full-rate business, the problem of securing adequate railroad service to meet the growing requirements of the commutation traffic would become even more complicated. Time was when low commutation rates were justified to some extent by the incidental full-rate travel and full-rate freight traffic which arose from them. Motor trucks have taken most of this incidental short-haul freight business. Is the bus now to take away the incidental full-rate passenger business and leave the commutation traffic to stand alone on its own shaky legs? The question is of importance not only to the railroads, but also to the commuters and the suburban towns.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Accident Bulletin No. 93, compiled by Bureau of Statistics, U. S. Interstate Commerce Commission. Covers collisions, derailments, and other accidents on railroads, calendar year 1924. Includes number of grade crossings, 1924, p. 115, casualties in grade-crossing accidents 1890-1924, p. 15. 115 p. Pub. by Govt. Print. Off., Washington, D. C. 20 cents.

Cumulative Index to Decisions of the United States Railroad Labor Board to January 1, 1925. *Vols. I-V inclusive. Decisions No.* 1-2773. Printed as supplement of Vol. V, Railroad Labor Board decisions, 1924. 188 p. Pub. by Govt. Print. Off., Washington, D. C. 25 cents.

Forty-First Report, Railway Accounting Officers Association. Proceedings of Atlantic City meeting, June 10-12, 1925. 511 p. Pub. Railway Accounting Officers Association, Washington, D. C. $2.00.

Northern Echo-Railway Centenary Supplement. Special edition on heavy paper. Illustrated accounts of British railway development. 82 p. Pub. by Northern Echo, Darlington, England. 3 shillings 6 pence.

The Railroads as Creators of National Wealth, by McKinley & Morris. Railroad history from economic point of view. 4 p. Pub. by McKinley & Morris, New York City. Apply.

Steam and Electric Railroad Cars and Railroad Repair Shops, compiled by U. S. Bureau of the Census. Reprint of section of Census of Manufactures, 1923. Statistics for 1914, 1919, 1921 and 1923. 27 p. Pub. by Govt. Print. Off., Washington, D. C. 5 cents.

Periodical Articles

The Centenary of the Omnibus. First bus ran in Nantes, France 1825, and is shown in a series of pictures illustrating bus "pre-history." Graphic [London, Eng.], Sept. 12, 1925. p. 415.

A Formula for Freight Rates, by John G. Schaffer. "By means of this formula direct comparison of the component parts of various rate structures is possible." p. 419. Journal of Amer. Statistical Association, Sept., 1925, p. 416-419.

The Pacific Railway Issue in Politics Prior to the Civil War, by Robert R. Russel. Quotes many old documents. Mississippi Valley Historical Review, September, 1925, p. 187-201.

A Study of Net Railway Operating Income, by LeRoy E. Peabody. From 1895-1916, and 1916-1923. Journal of the American Statistical Association, September, 1925; p. 368-379.

New Books

The Present Economic Revolution in the United States, by Thomas Nixon Carver, Professor of Political Economy, Harvard University, 270 pages, 5¾ in. by 8¾ in. Bound in cloth. Published by Little, Brown & Company, Boston, Mass. Price $2.50.

Business and professional men, industrial leaders, conservative-minded workers—who have long been treated as either stupid or cruelly selfish by certain economic reformers—will find their justification in this book. Professor Carver makes the claim that capitalism not only can provide the diffusion of wealth and general well-being which socialism promises, but that at the present time in the United States it is actually approaching that goal. Conservative persons—business men who have attended to their business and workers who have refused to let a lot of radicals lead them into economic morasses of socialistic dogmas—have brought the dawning of the period of general well-being—which they did not boast they could do. Meantime the disciples of Karl Marx, with a program which guaranteed the appearance of the millennium, have been given an absolutely free hand in Russia and have brought the people to the door of starvation.

Three or four quotations from the book will make clear the author's main thesis:

> The time has come when it is no longer necessary to rely upon theoretical analysis to show that wealth can be diffused under the system of voluntary agreement. Prosperity can be given to all classes, without giving up the system of voluntary agreement among free citizens as the method of getting things done. We are actually beginning to achieve a wider diffusion of prosperity; students know it, and everybody else feels it, except those few who are still harping on the old theme.
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> The only economic revolution now under way is going on in the United States. It is a revolution which is to wipe out the distinction between laborers and capitalists by making laborers their own capitalists and by compelling most capitalists to become laborers of one kind or another, because not many of them will be able to live on the returns of capital alone.
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> The labor movement in this country is so far in advance of that in any other country as to make comparison impossible. In European countries, including Great Britain, labor organizations and the more conspicuous labor leaders are still pursuing antiquated methods that are comparable to the attempt of a man to lift himself by his boot straps. Here they are using the solid ground of capital ownership and are actually lifting themselves into positions of well being that amount to affluence in comparison with the conditions of European laborers.
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> There are at least three kinds of evidence that indicate roughly the extent to which laborers are becoming their own capitalists: first, the rapid growth of savings deposits; second, the investment

by laborers in the shares of corporations; third, the growth of labor banks.

Concrete figures are given to show the exact extent of progress in these three directions, in the latter of which a railroad union is in the vanguard.

Professor Carver holds that the present prosperity of the workers would have come sooner had it not been for unrestricted immigration. This country has great natural wealth and its political and economic system encouraged free enterprise. Hence industrial development followed naturally. The constant stream of immigration, however, kept the labor supply so plentiful and out of all proportion to the available capital that, naturally, labor, compared with capital, was at a discount in the market. The stoppage of immigration during the war and its subsequent restriction have changed this condition. More rapid accumulation of capital in the pre-war days would have provided that much more employment of labor, *but* this additional demand would have been supplied by increasing immigration from abroad. Now, with immigration restricted, prosperous labor can well turn capitalist, knowing that as it does so it is making that much more of a demand for labor and, with no foreign competition, is improving its own wage-earning position.

The author believes that in this country we are tending to a balanced economic system. By this is meant that "every essential industrial function" will be "as well and as adequately performed and as well paid, all things considered, as every other." This, he says, is a revolutionary idea, but he asks that "the hard-headed, incredulous type of man" who is the "backbone of modern democracy and the safeguard of our institutions" give his attention to it. Such men, he says, are "suspicious of anything which promises too much," yet "they are the only people really worth convincing." If our economic system were balanced, no man would go into business when he wanted to be a bricklayer, simply because the earnings of a tolerably efficient bricklayer and a tolerably efficient business man would tend to be the same. Naturally there would not be equality *within* occupations. The business man of mediocre ability would not earn as much as the business man of greater ability, nor would a chorus man get the same wages as a star actor. Doctors and other professional men would, naturally, have an expectancy for greater earnings than carpenters, to compensate them for the greater time spent in acquiring an education, but the greater earnings of professional men would not exceed the amount necessary to cover this period of waiting and training.

Professor Carver is not asking for the passage of any laws to bring about this economic balance. He believes that it is coming without any laws. What he does is to describe what a balanced economic system is and to give his reasons for believing it to be desirable.

He continues:

> A by-product of this balanced condition is that laborers need none of those special aids or helps in bargaining that most of us have tolerated, and some have advocated in the past. With bargaining power equalized (i.e. between laborer and capitalist), as it would be under a properly balanced industrial system, the individual of whatever class, trade or occupation can be his own master and make his own arrangements, bargains, or voluntary agreements with other individuals, retaining his freedom and prospering under it. . . . . Another result would be to make most of our social legislation unnecessary.

We are, apparently, about to see in this country the accomplishment of something which has never been accomplished before—the practical abolition of poverty. This much has capitalism working in a naturally prosperous land under the American tradition of liberty accomplished. Are the upholders of this tradition—hard-headed men of affairs, workers, yes and the more substantial leaders of organized labor—going to continue to leave most of the thought and planning for future progress to persons without any such accomplishment to their credit? That is the challenge of this book.

This author's thesis seems to be somewhat vulnerable in some of its minor details. For instance, if government action in restricting immigration and in prohibiting alcoholic liquors is defensible, as the author claims, does not the general argument of economic activity undisturbed by governmental interference suffer thereby? If the desideratum is the maintenance of private initiative with a greater diffusion of the products of industry, are heavy taxes on large incomes or even the excess profits taxes to be justified for their assistance to the leveling forces, as are prohibition and immigration, or condemned as dangerous paternalism? This is an important question, but he does not touch upon it.

Just where, in other words, would the author draw the line between beneficent governmental action and harmful official meddling?

Some persons will undoubtedly consider the thesis utopian and more will consider it, at best, over-optimistic. But these and other criticisms fall before the great message of hope, founded on observable fact, which the book holds out. Moreover, the author has a forceful and entertaining literary style and his language is non-academic and non-technical. The book is eminently readable even by those who ordinarily find works on economic subjects rather heavy going. There are few persons except confirmed radicals who will not find it informative and inspiring. Its message is particularly important for all who are interested in improving human relationships in industry.

Freight Yards, Terminals and Trains and Freight Traffic Operation, by S. C. Ghose. 196 *Pages.* 6½ *in. by* 10 *in. Bound in Cloth. Published by the Book Company, Calcutta, India.*

This work is a thorough treatment of the subjects mentioned in the title, by a railway officer of wide experience on the railways of India. While it is designed primarily for Indian readers and its main emphasis is laid in drawing attention to problems peculiar to that country, nevertheless it will have interest and some value for any railroad man alert to improve his knowledge on the subject. The author shows little provincialism in his treatment of the subject—he draws constantly on English, American and European practice for his examples. It has often been remarked that, whereas railway conditions in India, Australia and one or two other countries are quite similar to conditions in America, nevertheless in these countries English methods of railroading have prevailed. This situation is undergoing a gradual change. These countries are getting more and more away from the light cars, with no air brakes and manual couplings and consequent light trains, and are taking steps to deal with freight on a larger scale. Mr. Ghose's book will serve as a guide to the extent to which this movement has gone.

Incidentally, several British railways have developed what is known as a "train control system," which corresponds to the American train dispatching system insofar as it concerns the ordering of train and car movement for efficiency, rather than safety—both of which functions are performed by the dispatcher here. The system is being adopted in India. "Train control" in some respects goes much further than the American system in centralizing in one office the control of all car, train and engine movements. The description of its adaptation to India where conditions are more nearly similar to those in this country might offer some valuable suggestions to transportation officers.

Letters to the Editor

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

College Training a Commercial Asset

BANGOR, ME.

TO THE EDITOR:

I have been much interested in reading the articles which have appeared in the *Railway Age* during recent weeks concerning the status of the college man who elects to enter railroad work. From the discussion one gathers that the field of railroad transportation is not particularly alluring to the college graduate, principally because individual progress in it is likely to be rather slow. He has been blamed for exhibiting a feeling of superiority over his seniors in service who do not possess similar educational advantages, and for considering that more rapid advancement is due him solely by virtue of his higher education. On the other hand we hear railway executives criticized as lacking in appreciation of the advantages that a college education gives one, and for being slow to provide suitable opportunities for the attraction and advancement of that type of employee.

There are two principal reasons why advancement in railroad work is apt to be slow. First, because the business as a whole is so complicated and departmentalized that it takes years of actual work to become acquainted with many phases of it even in a general way. This is in quite striking contrast with any line of business that mostly consists of one or two operations, such as buying and selling, or the manufacture and sale of a limited variety of articles, the whole plant being in one place. In any such line, one with reasonable aptitude and liking for the work can much more quickly master the details of it and be in position to advance more rapidly than would be likely in a more complicated and departmentalized business.

The second reason is that the railroads have long since come to a stage of routine as contrasted with growth. They are organized to handle their business from day to day but are not expanding in any such manner as to call for a steady and large supply of trained men to fill newly created responsible positions. A man who may be very capable is apt to find himself in a situation similar to a bucket in a bucket brigade, that is, he passes along just as fast as those who happen to be ahead of him travel. This is an unavoidable condition in any organization that has attained its growth. Rapid advancement lies in the way of the small business with the big future, as witness the railroads themselves some half century ago, or the automobile and motion picture industries in more recent times.

Now all this applies to either the college or non-college man. The advantages of a college education, it seems to me, lie in the resources to be found in the superior mental training that the honest and hard working college student obtains, in the broader outlook that he has as a result, and in the finer mental attitude which he ought to have toward his work, whatever that may be. All these things, apart from a strictly professional education, fit him the better for advancement as it comes, but no man can expect to stand wholly upon the merit of education. The school of hard work must supplement it, and the well earned rights of seniors in service, regardless of the degree or type of their education, must be considered. The only thing that ought to put any man ahead is the record of good past accomplishment. In so far as a college training will assist in making that record, just so far is it a valuable commercial asset on a railroad or anywhere else.

W. A. R.

The Pension Systems

NEW YORK.

TO THE EDITOR:

J. C. Clark has done a real service to the railroads in his communication to the *Railway Age* of September 26, 1925, page 551, by questioning the soundness of the basis upon which the pension systems of the railroads have been developed. In these days when insurance companies have demonstrated the necessity of the best type of actuarial service, there is no excuse for any organization going blindly into this question of pensions. Studies and experiences on the part of industrial organizations have clearly indicated that a proper reserve must be built up to meet the steadily mounting expense of the pensions, which does not reach the maximum until many years after the system has been started.

There are other rather serious problems that will undoubtedly confront us in the future. On the railroads, for instance, the labor turnover has been heavy and only a comparatively few of the workers have remained in the service of a railroad up to the time of their retirement from active business. Today progressive railroads are doing all they can to provide uniform or stabilized employment and to so select, place and train men as to reduce the labor turnover. Will this not result in a very much larger percentage of the employees remaining in the service of the railroads throughout their lifetime? Then, too, because of the consolidation of the railroads there promises to be much less shifting from one system to another. On top of this we must remember that health education and closer attention to physical fitness is tending to prolong life. Must not all of these elements be given some consideration in determining upon the amount of the reserve that must be built up in order to afford adequate future protection to our pension systems? Obviously, these systems once started must be maintained, or else their value in developing a higher morale will be lost. Is it not high time that the railroad managements squarely faced this problem and took steps to set aside for future requirement amounts which will cover the liabilities now being incurred?

OBSERVER.

THE WOMEN'S TRAFFIC CLUB of Los Angeles (Cal.) held its regular meeting on September 16. The speakers were Major Roger Marchetti and J. M. Ford.

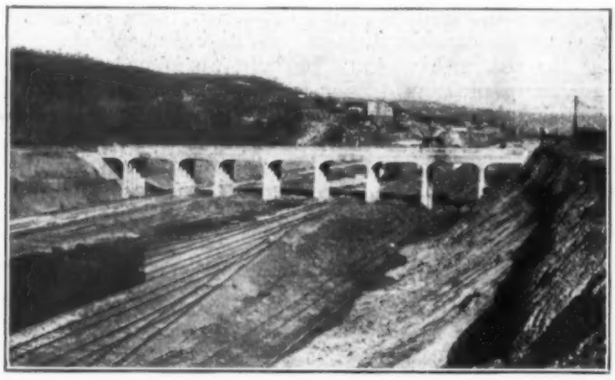
WHEN THE HEARINGS before the Interstate Commerce Commission in the western rate case are resumed at Chicago on October 26 the carriers plan to have the out-of-town witnesses who are to be cross-examined by the opposition available before those from Chicago and nearby points, according to a letter written to Chairman Aitchison, of the commission, by R. N. Van Doren, vice-president of the Chicago & North Western and chairman of the law committee of the western roads. This is to avoid delay to those who must travel long distances to Chicago. The witnesses from nearby points will be available at the convenience of the opposition. Chairman Aitchison in reply expressed approval of this plan as being in the interest of expedition.

During the Early Stages of Construction Between Clifton Forge and Selma

Chesapeake & Ohio Completes Modern Hump Yard

New terminal facilities at Clifton Forge, Va., contain many interesting features of design—Heavy work

THE Chesapeake & Ohio has recently put into operation a modern hump yard for the classification of eastbound traffic passing through Clifton Forge, Va. The new facilities involved much interesting and difficult work, owing to the fact that they are located in the narrow valley of the Jackson river. The work was further complicated by the necessity for carrying the classification yard tracks over the river on a large bridge, by two river changes involving heavy yardage, and by the removal of a considerable number of dwellings. The switches of the new yards will be electro-pneumatically controlled and the yard will be equipped with a complete flood lighting system.



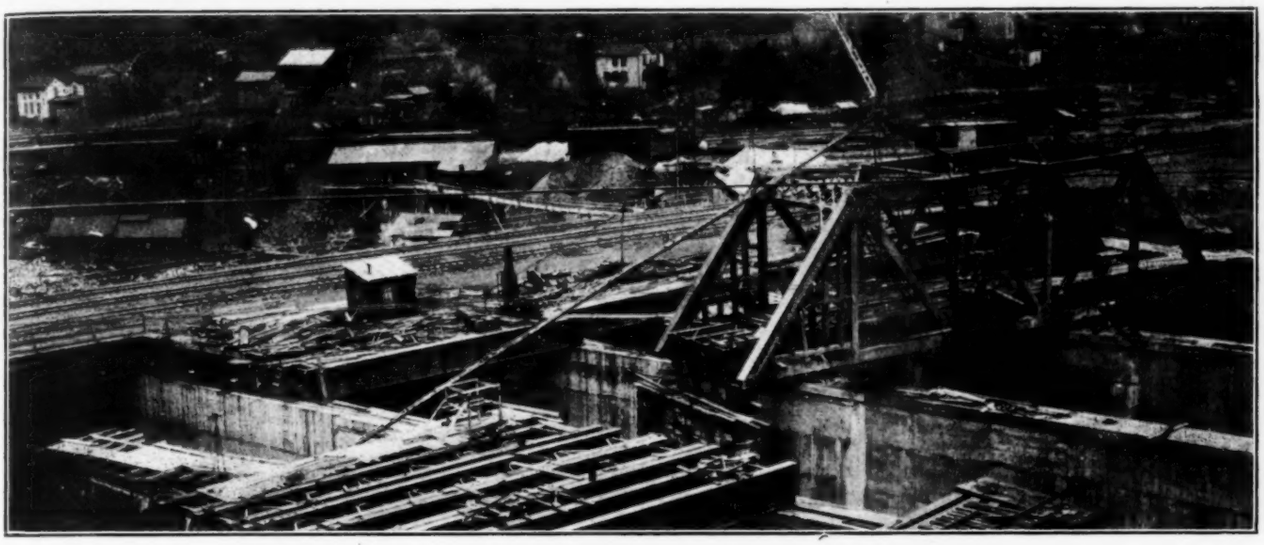
A Concrete Viaduct Carries the Main Highway Over the Yard

Clifton Forge is the terminus of the Allegheny, James River and Mountain districts and is the classification point for all eastbound freight. With the growth of traffic since the war, the old facilities had become entirely inadequate and a program of complete rehabilitation and reconstruction was inaugurated. Among the first work done at this point was the building of a new engine terminal. This was described on page 955 of the April 22, 1922, issue of the *Railway Age*. The next step was the building of a large and modern hump yard to replace the old flat yard. An article on the general scope of the yard project appeared on page 365 of the February 9, 1924, issue.

A 23-Track Structure Over Jackson River

The old facilities had a total capacity of 1,640 cars with

tracks too short to accommodate full length trains, and were totally inadequate to handle the traffic, which has averaged 99 trains or 1,746 cars, including 1,000 loads per day for a 30-day period, with daily peaks as high as 1,326 eastbound loads. During the periods of maximum movement it has only been possible heretofore to handle the traffic through Clifton Forge by requiring other yards to perform the switching which should have been done at that terminal.



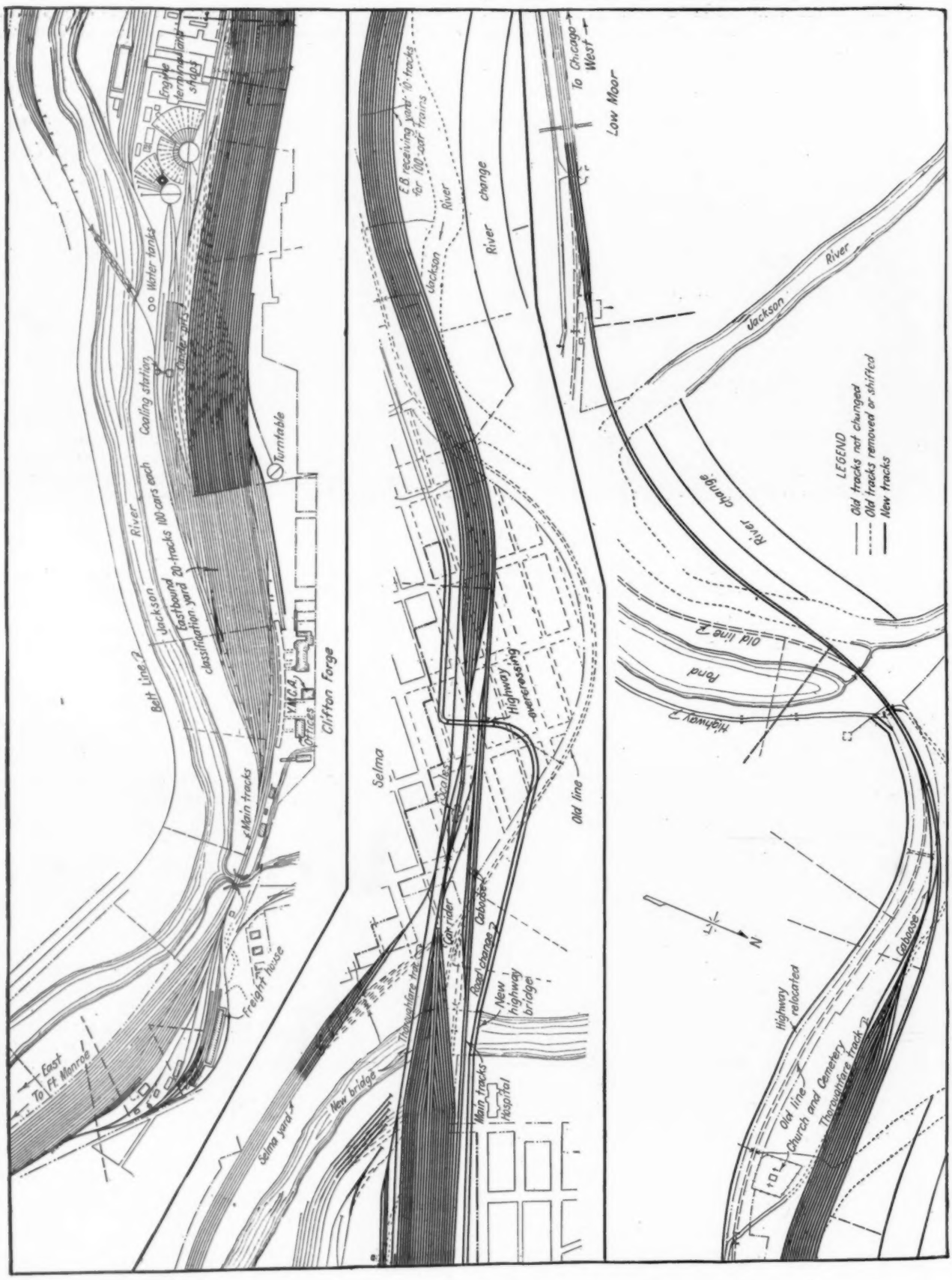
Moving the Old Truss Span to its New Location

The new yard facilities at this point include a 10-track receiving yard approximately 5,000 ft. long leading to a double track hump and thence to a 20-track classification yard, also approximately 5,000 ft. long. In connection with this new layout, the old departure yard will be continued in use. The entire layout extends from near the passenger station in Clifton Forge, west through Selma, a suburb of Clifton Forge to near Low Moor, a distance of about three miles. The grade of the receiving yard is 0.1 per cent, descending east to the approach to the hump, where it ascends for 100 ft. on a 1.5 per cent grade. The hump is level for 28 ft. with a short run-off of 38 ft. on a 4.0 per cent grade to the scales, where for 108 ft. the grade is 0.75 per cent. Leaving the scales there is 100 ft. of 3 per cent grade to the entrance to the ladder tracks, through which the grade is 1.0 per cent, changing to 0.5 per cent through the classification tracks. The approach from the receiving yard to the hump is double track with two tracks over the hump and to the classification yard.

Diamond cross-overs have been installed on both sides of the hump, thus resulting in conjunction with the grades that have been used, in an exceedingly flexible and fast operation in the classification work. Two sets of 300-ton scales with 76-ft. weigh rails have been installed. Two ladder tracks, each serving 10 tracks lead down the center of the yard with the classification tracks outside of them. The ladder angle is 7 deg. 9 min. 10 sec.

The Yard Site Was Crossed by Jackson River

A car rider track was installed between the ladders, extending for the full length of the yard. A gasoline motor car will be operated on this track for the transporting of the riders back to the hump. An engine thoroughfare track follows along the south side of the receiving yard and to the engine terminal which is situated about



Map Showing the Added Facilities and Reconstruction at Clifton Forge, Va.

midway in the classification yard and between that yard and Jackson river. The old main line which formerly wound in and around through this section has been relocated and now parallels the north side of the yard with a much improved alinement.

For the general lighting of the yards it was decided to make a complete flood lighting installation. For this purpose seven steel towers, 70 ft. high, were provided, in addition to which the roof of the coal dock and the tower over the coal elevator of the power plant were also utilized. This resulted in nine batteries, all but one of which are double batteries pointing in two directions. Each battery is made up of from three to six 14-in. flood lighting projectors, using 1,000-watt, 115-volt, standard PS 52 lamps, to produce a general illumination of from 0.1 to 0.2 lumens per sq. ft. in the receiving yard and from 0.2 to 0.5 lumens per sq. ft. in the classification yard. It was felt that while this lighting intensity might be a little high for ordinary yard lighting service, it was a necessary precaution in securing satisfactory illumination at this important terminal when due allowance had been made for depreciation and for smoke conditions, particularly where no smoke ordinances exist, as is the case at Clifton Forge.

Each tower of this installation has an individual transformer for the current supply, operated in conjunction with a low voltage relay system for opening and closing the lighting circuit, which is controlled by a master switch in the power house. Individual, manually operated switches have also been included in each projector circuit to enable the workmen to clean the projectors and to make renewals or repairs without interruption.

One of the interesting features of this work was the necessity for carrying the ladder tracks of the classification yard over Jackson river in order to secure the proper length of yard. Jackson river at this point crosses the yard site at an angle of almost 90 deg. and is over 200 ft. wide. This resulted in a structure approximately 260 ft. long, with a maximum width of about 300 ft. on the deck. As the new main track was carried over the river on an adjoining bridge for which the same abutments were used, the maximum length of the longest abutment was approximately 413 ft. The yard track crossing consists of a four-span, deck plate girder bridge carrying a reinforced concrete slab and ballasted deck superstructure for 23 tracks on concrete abutments and piers. The girder spans are 65 ft. 2½ in. long by 8 ft. deep, and have been erected parallel to the center line of the structure except at the extremes where the outside girders followed the diverging

One of the River Changes Which Permitted a Much Improved Alinement

West End of the Selma Cut, Showing One of the Loops of the Old Main Line Which the New Project Eliminated

lines of the outside ladder tracks with intermediate girders on varying angles to distribute the load properly.

The structure was designed for Cooper's E-60 loading. The slab is approximately 1 ft. 6 in. thick, with the upper surface sloping to drain holes located between girders, there being over 3,000 such holes in the slab. The extremes of the slab are cantilevered out 5 ft. from the center line of the outside girder, and carry a retaining wall brought up to the elevation of the base of rail. For safety purpose a pipe railing has been mounted on each side of the tracks over the slab.

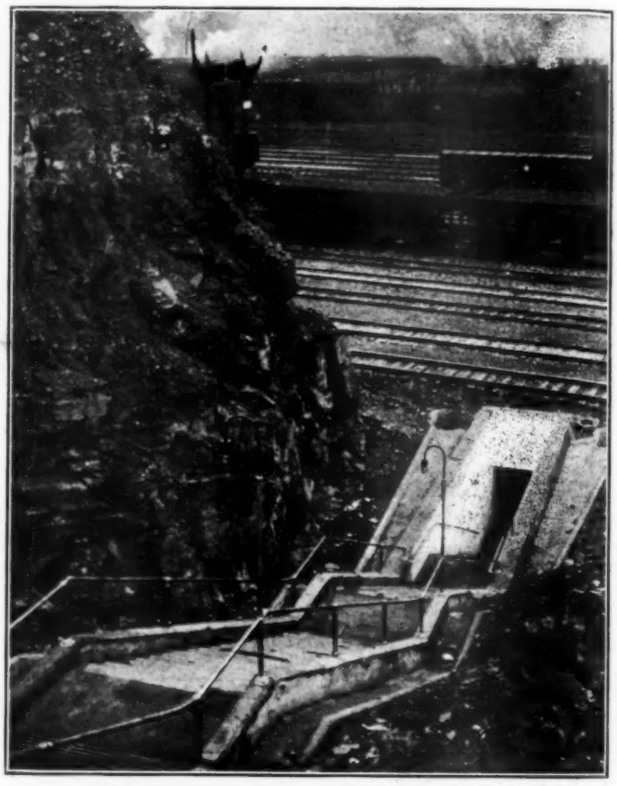
The old main line crossed Jackson river on two double-track truss spans, situated at about the center of the site for the new structure. Adjoining this there was an old highway bridge, a pin-connected deck truss which also required relocation to the north of all the tracks. Actually this structure was removed and a new concrete spandrel arch bridge was constructed on the new location by the State Highway Commission, the cost being met in part by the railroad. As the railroad truss spans were comparatively new, it was decided to move them to a location just north of the classification yard bridge, and for that purpose the abutments and center pier were extended to carry them. Since it was necessary to continue both railroad and highway traffic over the river at all times, the following general scheme of erection was followed:

The new abutments and piers were constructed up to and as near to the double-track truss spans as possible, following which the placing of the girder spans and concrete deck was started. In doing this work, a novel scheme of unloading and placing the girders was worked out. Owing to the incomplete stage of the grading, it was necessary to unload from the old main line, the girders being placed near one abutment. From this point, they were picked up and slid out on a rail runway supported on the outside of the spans to a position approximately opposite the piers upon which they were to rest. They were then lowered on to skids on the top of the piers, and by means of a hoisting engine the girders were pulled or slid along the piers to their final position. As soon as the deck could be placed on one end, temporary main line tracks were laid and the traffic diverted over the new bridge. The highway traffic was likewise taken care of in a similar manner, and the old highway bridge removed. While this work was being done, the construction of the piers and abutments to the north of the truss spans was carried forward, following which the truss spans were jacked up to allow the completion of the piers, there being four feet difference in elevation between the old and new elevation of the crossings. The spans were then skidded along on the piers to their final position.

Another interesting feature of the work at Clifton Forge was the construction of a long passageway under the classification tracks. As the engine terminal and shops were located on the opposite side of the yard from the town, it was necessary to provide some means whereby the employees could cross without danger. This was done by constructing a reinforced and waterproofed box running the full width of the yard or about 384 ft. One end opens out directly in front of the check room at the shops and engine terminal and the other end upon a concrete stairway leading up 50 ft. to the street level. Lighting within the passageway was supplied by lamps located every 30 ft., and recessed within the ceiling or top slab. The interior dimensions of the box were 6 ft. wide by 7 ft. high. The street entrance end has a canopy over it as a shelter against rain and, as a further protection against water within the box, gratings were placed in the landings through which the water on the steps could be carried to drains along the outside and then to the main yard drainage system. The construction of the passage was carried out by excavating a trench across the yard in advance of the grading for the tracks, the material being almost entirely solid rock.

The extra width needed for the enlargement of the yard facilities necessitated the removal of a large amount of hillside excavation in the vicinity of Clifton Forge proper, and the opening up of a wide cut through the adjoining town of Selma. In order to do this, it was necessary for the railroad to purchase about 80 dwellings divided between the two towns. Some of these were wrecked, while others were moved to new locations and resold.

The cut through Clifton Forge was largely rock with



Subway Under Yard and Method of Drainage

a maximum depth of excavation of about 75 ft., and involved the moving of about 1,000,000 cu. yd. of material. The cut through Selma also necessitated considerable rock work and reached a maximum depth of about 45 ft. The yardage moved was about 500,000 cu. yd. The location of the new receiving yard necessitated a 1,000,000 cu. yd. fill just to the west of the Selma cut, and chiefly in the bed of the river. This was made possible by diverting the river through a channel or cut-off 3,600 ft. long constructed by the railroad. Still further west, an improved alinement was made possible by a second channel change about 2,000 ft. long. Both channels were made 100 ft. wide by 20 ft. deep with one to one slopes, and necessitated the handling of about 500,000 cu. yd. of material, all of which was wasted along the banks. The total excavation in this undertaking was approximately 2,000,000 cu. yd.

In addition to this work, about 5,000 ft. of new highway were graded and surfaced in order to replace roads destroyed by the yard excavation and to insure a complete separation of grades. The new highway crosses the yard near the hump on an attractive concrete viaduct built by the railroad. The new terminal was designed by and constructed under the direction of the engineering department of the Chesapeake & Ohio, C. W. Johns, chief engineer, and C. Miller, bridge engineer, with E. G. Rice, district engineer, and G. G. Lancaster, resident engineer in charge of the work in the field.

An Industry Pleads for Co-operation

Bolt, nut and rivet manufacturers frankly lay case before the railroads and ask for consideration

By Chas. J. Graham
President, Bolt, Nut and Rivet Manufacturers Association

FOR a number of years prior to, and during the war, the railroads of the United States had a supreme struggle for existence brought about particularly through a lack of public support, culminating in a reaction which practically destroyed the morale of the entire railroad organizations and created a lack of efficiency which placed our transportation systems in a position where it was impossible to handle our products during peak periods. The assumption of railroad control by the government during the war was the one move necessary to bring forcibly to the attention of the public, to industry, and to the government at Washington, the true picture of the serious hardships under which the railroads had been operating; and, as a result of the terrific losses sustained during this period, to a full realization that something radical must be done to save our transportation system from absolute ruin.

Publicity resulting from government control, created a wave of sympathy throughout the entire country, which rapidly grew in such volume that today, instead of the railroads being the football of the public, of industry generally, and of our lawmakers as a whole, they have public sentiment behind them as never before in history, and have been given an opportunity to show their possibilities. As a result, our great transportation systems, under highly efficient management, have demonstrated their power to operate successfully, and have staged the greatest comeback in a period of five years ever attained in any line of endeavor.

The nation has come to a full realization that the railroads belong to it, and are operated entirely for its benefit, and are really its backbone; and, partially as a result of this feeling, and as a result of the ever present "square deal" between the employees and the management, there has been a return of morale to a point not reached in a decade.

Under this new scheme of things there has been a great increase in efficiency, and today the roads are securing at least a 25 per cent increase in manpower over the war period. As an example: Had one of our large systems, owning approximately 250,000 cars, been operating in 1923 (the peak traffic year up to that time) on the basis of 1918 efficiency, it would have required 60,000 additional cars to handle its traffic.

While the rate structure of the country has not been adjusted as yet to give the railroads the return contemplated by the Transportation Act, they have at least been given an opportunity to live and make a return, while lower than it should be and to which they are unquestionably entitled is better than in most other lines of competitive industry.

Industry Facing a Crisis

Competitive industry generally is facing a crisis today almost as serious as that which confronted the railroads 10 years ago, but for an altogether different reason.

As a result of conditions existing during the war, large increases in capacity in all lines were created, and we now have an over capacity in almost all of our leading commodities running, in some cases, as high as 40 per cent.

As a result of unbridled and uneconomic competition—brought about by not only this over capacity but by the operation of restrictive and burdensome legislation—industry generally has been unable to make a fair return on invested capital and is having the same struggle for existence heretofore experienced by the railroads.

Therefore, industry should, through proper publicity, place its position squarely before the public, the railroads, and the government, and ask for a square deal and their moral support in trying to bring about a healthy condition in this—the heart of American commercial supremacy.

The operation of our major industries practically without profit, and in a great many cases at a serious loss, is uneconomical and a detriment to the proper growth and expansion of our country as a whole and the correction of such a condition is as important to the life blood of the nation as it was to give the railroads—the arteries of our industrial development—a chance to recuperate.

A New Era

Industry is in a new era. The great speculative periods heretofore existing in our business life have become a thing of the past, and opportunities do not rise to recoup in what might be termed "boom periods" the losses sustained in periods of depression. "Boom periods" in the past were brought about chiefly by speculation. This created an unhealthy wave of buying which forced prices beyond a reasonable level, caused congestion in our mills and factories and on our transportation lines, and was always followed by what might be termed the natural result—terrific depression, while the country was compelled to absorb its gluttonous repast.

This condition reached its high level in 1920 and the reaction in 1921 was the greatest lesson industry ever had of the absurdity of such methods. In other words, 1921 was the great year of cure for conducting industry as a speculation rather than on a sound commercial basis.

In any event, the opportunities to speculate do not exist today as they did heretofore—we do not have the violent fluctuations in our basic commodities that formerly existed; the ownership, particularly of our major industries, has fallen largely into the hands of the people, and their officers are compelled to give more thought to other than the greed of taking business, and are forced to operate on a profitable basis or with as little loss as possible.

These unhealthy periods of inflation forced upon our railroad systems (to enable them to obtain material on which to operate) the necessity to become manufacturers of many of their needed commodities, so they stand in the unique position of being not only in the transportation business, but very active competitors in a number of manufacturing lines. As a result of this, many industries must now appeal to the railroads for their co-operation and support in throwing back to the manufacturing interests that to which they are justly entitled.

This condition was brought about by circumstances beyond the control of industry as well as the railroads. As manufacturers confine themselves entirely to their given lines, developing always to a point of low cost production, so should the railroad executives confine themselves exclusively to their business of transportation to develop it to the fullest extent—the best of transportation at the lowest possible cost—rather than have a part of their time and effort engaged in the solution of industrial problems.

Industry today has reached such a stage of development and specialization that it cannot be operated successfully as a side line; and, it can be stated without fear of contradiction, that, should the railroads cease entirely their manufacturing activities, they would not only be able to secure all their materials within a reasonable time, but save many millions of dollars per year—vastly more than sufficient to pay a large return on their capital invested in such manufacturing properties—and, in addition, would enable them to confine themselves entirely to the problem of transportation, which is in itself, large enough for any organization to solve.

Bolt, Nut and Rivet Industry

The bolt, nut and rivet industry of the United States has an investment exceeding one hundred and fifty millions of dollars; and, as a result of over production, unbridled competition, and other causes beyond its control, reached a stage in 1924 where its net losses ran to approximately one million dollars per month, and to the point where a number of manufacturers were facing absolute bankruptcy. This industry reached a state of complete demoralization—one bordering on chaos—and, as a matter of self-preservation, was compelled to make a right about face, gather its forces, and make a careful study of its condition.

This period of study developed an almost unbelievable situation. It was found that since the inception of the industry, not one constructive move had ever been attempted by the industry as a whole, that all the time and thought of the individual manufacturers was to develop their industrial plants and companies regardless of their competitors, and, if it became necessary, to carry on in an endeavor to put competitors out of business. In other words, it found the whole basis of its past business experience and methods had been built on selfishness. Countless evils had crept into its business methods and no effort of any kind had ever been made to eradicate them. They were fostered and developed to a point where they became the controlling factors.

Co-operation Within the Industry

The first constructive move was started in August, 1924, and, the items given the most careful consideration were uniform cost accounting, standardization, the elimination of waste, uniform kegs and packages—all in line with the policy of, and the three latter in co-operation with, the Department of Commerce. Last but not least, the throwing open to competitors of practically all of its plants so that all would have an opportunity to benefit from the experience and example of the low cost producer—the company with small capital to have the full knowledge of the accomplishments of the company with unlimited resources, and to install improvements without the large experimental expense necessary in development work.

In other words, the chief object of this industry is to have every plant operate on as low a cost basis as possible so that all will have an equal chance in profits or losses—whatever they may be—and the great saving attained by such methods be handed down to the ultimate consumer.

One of the biggest problems it had to face was over production and to find ways and means to fill the gap between a 60 per cent operation under normal conditions and the hoped for one hundred. It developed, after investigation, that, for reasons heretofore stated, almost all railroads and large industrial consumers of its product had installed machinery to take care of at least a portion, if not all, their own requirements. This, then, was found to be the most productive field on which to begin its work.

A Railroad Department

A railroad department was installed and a careful study made to determine as to whether or not material could be sold by the industry to the railroads at lower than their own cost of production, and, in all cases investigated up to the present time, this was demonstrated conclusively.

The bolt, nut and rivet industry, therefore, makes an appeal to all the railroads for an opportunity to demonstrate its ability to make them a large saving in this commodity, to ask their hearty co-operation in an effort to live, to permit of an economic operation of its plants and to produce for the railroads, not only a superior article at less cost, but to enable them to largely increase that item for which they are striving at all times—additional traffic.

Live and Let Live

It should be the aim of the railroads to foster industry and not compete with it. Industry is largely responsible for the revenue on which the railroads exist. Their co-operation will not only increase revenue as a result of increased traffic, but will be a great saving in the purchase of material rather than the manufacture of it. Let the slogan of industry and the railroads be "Live and Let Live." Let each strive for the other's interest. It is purely a mutual proposition and is only carrying out the basic principle of our earlier education. "Help One Another."

The benefit of such a policy is, in the end, for the public as a whole and is what every interest should, in this twentieth century, be striving for.

The executives of the bolt, nut and rivet industry, therefore, go on record assuring a spirit of fair dealing, of honesty of purpose, of a new code of ethics in business, and earnestly solicit the full co-operation of all railroad and industrial executives in their endeavor to salvage what is left of their life's work, to make of their industry something of which they may be justly proud, and to enable what is now a cripple in American commercial life to walk uprightly once again.

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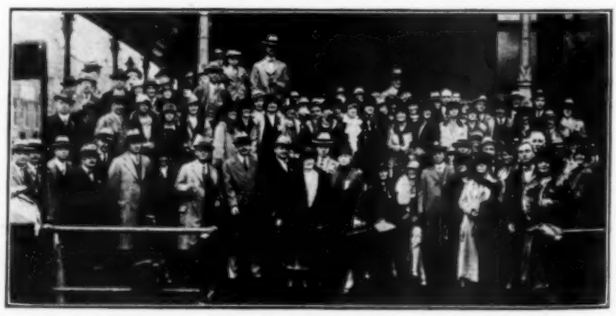


Delegates to the Convention of the American Association of Traveling Passenger Agents on Their Arrival at the C. N. R. Station, Montreal, on September 14.

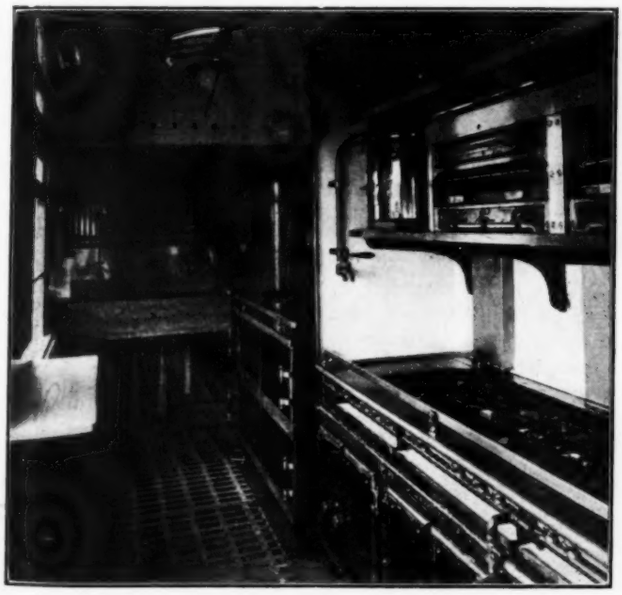
Kitchen Car Built at the Wolverton, Eng., Shops of the London Midland & Scottish Railway

Kitchen and Sleeping Cars on L. M. S.

Designed to cater for 250 *passengers simultaneously—*
Special provisions are made to reduce vibration and noise

LONDON, Eng.

THE London, Midland & Scottish Railway has placed a number of new kitchen and sleeping cars in service on its lines between London and Scotland. These cars were built at the Wolverton, England, shops of the company. In recent years, due to the large



Interior View of the Kitchen Car

increase in passenger traffic it has often been necessary to have three or four sittings in the dining cars in order to serve meals to all those who desired to take advantage of the dining car service. This arrangement had the disadvantage that many patrons were compelled to have their luncheon or dinner much earlier or later than the usual time. In order to eliminate this difficulty the kitchen cars of the type shown in one of the illustrations were built with sufficient capacity to serve 250 passengers at one time.

The Kitchen Cars Provide Double Service

The new kitchen cars are placed between two restaurant or dining cars so that double service of meals can be maintained, one from each side of the central range. The car is 50 ft. long and 9 ft. 3 in. wide and consists of a large kitchen in the center with pantries on either side and, beyond this, a compartment for the dining car staff and necessary toilet facilities.

In the kitchen is a large gas stove having three ovens, a hot plate with nine burners, three grills and two large hot water boilers. One of the boilers is connected to a circulating system, which provides hot water for the sinks, pantries and kitchens. The other boiler is installed for providing boiling water for making tea. A feature of the heating apparatus is the special plate warming cabinet in which 500 plates can be warmed at one time. The car is equipped with the usual refrigerators and conveniences for the chef and attendants, while each of the two pantries have similar refrigerators, wine coolers and all the equipment of modern hotel kitchens.

The construction of the car is practically fireproof. The underframes are of steel, the panelling is of steel, and the floors of Decolite elastic cement.

The separation of the kitchen from the dining cars eliminates the objection that has been raised to the smell of cooking, which is unavoidable in the usual type of car. Both first and third class dining cars are used in connection with the new type of kitchen cars. In other words, the system in vogue is practically the same as that used in the United States, in which a day coach passenger can avail himself of the dining car service if he chooses to do so.

Special attention has been given in the design of the

sleeping cars to insure smooth riding. The car is of steel underframe construction and is mounted on two six-wheeled trucks. Blocks of India rubber are fixed between the body and underframe and hair felt is inserted between the double floors in order to reduce vibration and noise to a minimum. Each car has 12 compartments, each with a single berth, an attendant's compartment and a lavatory, with a vestibule entrance at each end. Communicating doors are placed between six of the single berth compartments.

The length of the car body is 68 ft. 1 in. making a distance of 71 ft. 8 in. between the buffers. The width is 9 ft. The structural framing of the body is of oak and teak and is panelled with canvassed and blocked Honduras

Interior of London, Midland & Scottish Sleeping Car Compartment

mahogany. As shown in one of the illustrations, each berth is provided with a self-contained mahogany lavatory cabinet. The upper part of the cabinet contains a folding table and wash basin fitted with hot and cold water faucets and soap dish. All of the fittings are silver-plated. Illumination is provided by an electric light over the mirror and another in an enclosed fixture in the wall over the head of the bed. The latter fixture is fitted with satin finished glass, and in addition to the ordinary light, contains a small blue night lamp. Switches for regulating the lamps are located near the head of the bed so that a passenger can control the lighting conveniently.

Both the kitchen and sleeping cars are equipped with vacuum brakes.

THE MUTUAL BENEFICIAL ASSOCIATION of Pennsylvania employees held its twelfth annual meeting at Hotel Vendig, Philadelphia, on September 28 and 29, George W. Brown, president of the association, acting as chairman. Mr. Brown, a veteran passenger conductor, has lately retired from service under the pension regulations. This association now has 18,000 members and the personnel of the annual meeting consists of a "General Assembly" made up of 85 delegates. The meeting was addressed by Vice-Presidents W. W. Atterbury, A. J. County and G. L. Peck; also by J. C. Johnson, general superintendent of telegraph. M. F. Loughner, of Pittsburgh, Pa., was elected president in place of Mr. Brown.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended September 19 amounted to 1,098,428 cars, which was less than the record figure established in the last week of August and somewhat less than the total for the first week in September, but an increase of 21,581 cars as compared with the corresponding week of last year and an increase of 37,617 cars as compared with 1923. Largely on account of the anthracite strike coal loading was about 40,000 cars less than it was in the last week of August. Increases as compared with last year were reported in all districts except the Eastern and Allegheny, which were affected by the strike, and in all classes of commodities except grain and grain products, livestock and coal.

Miscellaneous loading showed an increase of 29,252 cars to 428,476 cars. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING

Week Ended September 19, 1925

Districts	1925	1924	1923
Eastern	240,094	247,299	239,472
Allegheny	210,358	215,535	220,514
Pocahontas	57,371	48,999	43,457
Southern	163,256	148,733	141,659
Northwestern	174,893	164,437	180,117
Central Western	174,267	177,807	164,824
Southwestern	78,189	74,037	70,768
Total Western	427,349	416,281	415,709
Commodities			
Grain and grain products	54,041	68,538	48,895
Livestock	33,486	38,500	41,159
Coal	171,601	189,486	182,591
Coke	11,481	8,943	13,339
Forest Products	70,400	68,046	73,646
Ore	60,094	48,367	75,530
Merchandise, l. c. l.	268,858	255,752	250,481
Miscellaneous	428,467	399,215	375,170
Total	1,098,428	1,076,847	1,060,811
September 12	975,434	1,061,781	1,060,563
September 5	1,102,946	921,303	928,916
August 29	1,124,436	1,020,809	1,092,150
August 22	1,080,107	982,760	1,069,915
Cumulative total 38 weeks	36,726,280	34,613,989	36,205,746

The freight car surplus showed an increase of 13,370 cars in the week ended September 14, which included the Labor Day holiday, to 160,368 cars. This included 59,929 coal cars and 68,779 box cars. The Canadian roads for the same period had a surplus of 20,011 cars, including 17,550 box cars.

Car Loading In Canada

With a heavy shipment of grain in the Western division and coal being loaded more freely at the mines, revenue car loadings at stations in Canada for the week ended September 19 showed an increase of over 10,000 cars over the previous week and of nearly the same amount over the same week last year, the total for the week ended Sept. 29 this year being 73,019 cars.

	Total for Canada			Cumulative totals to date	
Commodities	Sept. 19 1925	Sept. 12 1925	Sept. 20 1924	1925	1924
Grain and Grain Products	20,260	14,871	11,337	238,053	279,473
Live Stock	2,625	2,580	2,762	85,459	83,430
Coal	6,526	5,517	7,006	135,332	188,702
Coke	307	325	210	10,437	8,556
Lumber	3,574	3,508	3,607	134,386	136,597
Pulpwood	1,685	1,933	1,540	105,041	104,696
Pulp and Paper	2,178	1,715	1,974	76,530	74,893
Other Forest Products	2,299	2,204	2,203	107,040	98,979
Ore	1,881	1,228	1,289	51,763	47,345
Merchandise l. c. l.	16,106	14,650	16,055	573,083	545,949
Miscellaneous	15,578	14,098	15,341	464,660	445,821
Total cars loaded	73,019	62,629	63,324	1,981,784	2,014,432
Total cars received from connections	31,948	29,715	31,150	1,247,112	1,193,871

The Traveling Engineer an Instructor*

His function to disseminate information to employees for the economical movement of traffic

By D. C. Buell
Railway Educational Bureau, Omaha, Neb.

INSTRUCTION is the basis of all supervisory work. Successful supervision, to a large degree, requires that the supervisor must have the ability to select and train the men under him so that they will have a proper knowledge of their duties and will perform them in the best, easiest and most economical, and consequently the most efficient manner.

It is evident from the preceding statement that the traveling engineer should be an important factor in the dissemination of information to employees concerning every phase of their particular work and many phases of the railroad problem as a whole. Is this the case?

It is a fact that in some cases on some roads the traveling engineer, instead of performing the important duties of supervision and instruction indicated by his title, has degenerated into a mere "trouble-shooter." Such men no longer apply preventive supervisory methods. Their whole time is taken up on post-mortems.

This condition has been brought about by the fact that a traveling engineer is usually promoted on the same division where he has worked for years. It is taken for granted that he understands what a traveling engineer's duties are when he is promoted, and that little or no explanation need to be given him concerning the work of his new position. This is a great mistake.

One who has given thought to this subject and has analyzed the reasons why men have failed as traveling engineers, knows that such men seldom fail because of lack of practical experience concerning their work. Such failures are due to lack of supervising ability. Those who fail either do not understand how to handle men successfully, do not realize their responsibilities, are not able to plan properly how to perform their duties successfully, or else fail for some other reason which has nothing to do with lack of practical experience.

The Traveling Engineer Must Know Men

The successful traveling engineer must be more than a successful locomotive engineer and mechanic. He must understand men; he must know how to direct men successfully; he must know how to instruct men in their work and how to inspire them with the desire to perform their work efficiently. He must believe in his officers and his company, so that he, in turn, will inspire loyalty in the hearts of the men to their officers and to their company. If the preceding statements are logical and true, it becomes apparent that a man occupying the position of traveling engineer is not competent to become a factor in the proper dissemination of information to employees until he himself is properly trained concerning the responsibilities, duties and requirements of his position.

A traveling engineer should take time to stop and ask himself certain pertinent questions concerning his work and to crystallize into words, or, better, into a definite written statement, the answers to the following questions:

1—What responsibilities are placed upon me by my position and title?
2—What are the specific duties of my position?
3—What are the desirable ends that I should accomplish in carrying out my duties?
4—Have I the proper attitude of mind toward my work?
5—Have I the proper attitude of mind toward my men?
6—Am I fulfilling my proper duty to myself in fitting myself for further promotion?
7—Am I training an understudy so that there will be a man trained and ready to step into my positon when I am promoted?

Many traveling engineers will be surprised to find that they may have great difficulty, at first, in concisely stating the responsibilities of their position, and just as much difficulty in setting down in written form a list of the specific duties of their position and the desirable ends they are supposed to accomplish in carrying out their work. Until they work out such a statement in written form for their own information and use it as a guide for the proper performance of their work, they can hardly expect to take their place as a proper factor in the dissemination of information to their men concerning the economical movement of traffic.

General Knowledge of Road's Policy Essential

After the analysis of these questions the traveling engineer should then ask himself whether he really understands the fundamental purpose of railroading, whether he has a definite understanding of the policy of his company as regards operation, maintenance of power and equipment, and more particularly as regards its employees. He should also examine himself concerning his real knowledge of costs of work done under his supervision.

A man's superior officers intend that their supervisor should have a proper understanding of the policies of the company. If, through oversight, a traveling engineer's superior officers have not discussed this matter with him, the traveling engineer should take the first opportunity to discuss the matter with his superiors and obtain from them a definite statement of the problem of their particular railroad, its policy in the handling of its men, its economic position, the peculiar problems of his particular division, and the desirable ends which must be accomplished in order that the company will hold its place as an effective transportation unit and be prosperous.

Until a traveling engineer has accomplished this preliminary preparation he is in no position to plan his work intelligently or adopt a method for instructing his men and disseminating proper information to them concerning the broader phases of the transportation problem as a whole. A traveling engineer, who, by personality, training and experience, is properly fitted for his work, is one of the most effective factors of successful railroad organization. The traveling engineer has much to do with the economical use of fuel. Fuel is nine cents of the railroads' dollar of expenditure and is one of the few items of railroad expense that is not subject to legislation or fixed rules of practice. Locomotive maintenance is another important item of railroad expenditures. Here again mechanical knowledge and skill, common sense, and efficiency largely

*Abstract of a paper presented at the thirty-third annual convention of the Traveling Engineers' Association held in Chicago, September 15 to 18.

determine whether such maintenance is economically or uneconomically performed. Train handling, the prompt and efficient movement of traffic over the line, has large influence in the cost of conducting transportation. The engineer and fireman are just as important factors in obtaining prompt and efficient train operation as are the conductor and other trainmen. It can be seen, therefore, that the traveling engineer is at the heart of things. His influence is felt most directly in those channels where important expense items of operation exist. His personality, his understanding of his work, his efficiency probably have more to do with efficient operation than the work of any other minor supervisor of the organization.

Place Proper Emphasis on Cost Knowledge

The preceding statement means that if he is to get results it must be through the proper training, co-operation and service of his men. His men must have a knowledge of costs and a sense of values. They must know the relative importance of their various duties, the relative economies of the different locomotive appliances, the relative expense of various methods of operation. They must not only understand the immediate effect of their particular methods, but in addition must understand the supplementary effects of what they do. An example at this point may make this last statement clear.

An engineer and fireman may make an apparently satisfactory trip over the division. They may bring their train in on time. They may have done this with no more than the average consumption of fuel, but if the engineer has allowed the fireman to send the engine to the roundhouse with a dirty or clinkered fire, it may mean additional roundhouse expense and several hours' unnecessary delay in turning the engine and making it ready for service again. Such a crew, while having performed their own particular work with seemingly satisfactory results, have not sensed the bigger problem of railroad economies as a whole, and consequently have failed to do their full share in the economical movement of traffic.

The traveling engineer must train his men by the dissemination of information to appreciate the fact that the desirable end to be accomplished in any railroad work is final net economy of railroad operation. He will not obtain results until his men understand this broader view of the matter.

His dissemination of information, his educational program, may have to be extended far beyond the men under his immediate supervision. He must earn the friendship and respect of other supervisors so that he can explain his problems to them in such a way that they will understand their responsibilities in co-operating with him to obtain ultimate net economies. For example, he must be able to analyze with the dispatcher costs of train delays; he must be able to point out to the shop foreman the fact that valve setting in the shop has a very important influence on fuel economy on the road. He should have figures to back up his arguments. In the preceding case he should be able to demonstrate that the fuel loss in road service due to improper valve adjustment may average 10 per cent, that a locomotive in average freight service today consumes about 350 tons of coal a month. Ten per cent of this amount would be 35 tons, which at an average cost of $3.00 a ton would be $105.00 a month wasted, due to improper valve setting. This should demonstrate to the shop man that the few dollars he might save in slighting the setting of the valves of a locomotive passing through the shop would result in a very considerable ultimate waste of money.

The traveling engineer should remember that there is a negative, as well as a positive, way of disseminating information. If he pays no attention to certain practices which he should notice and correct, he disseminates the information that he is not interested in that particular thing, even though the matter has not been mentioned. The traveling engineer must interest himself in every matter that he expects his men to consider, every rule that he expects them to observe.

If a railroad company, after investigation, tests and experiments, adopts some mechanical device for their locomotives, which, if properly maintained and operated, will result in fuel economy or improved economy of operation, and the traveling engineer pays no attention to this device, he disseminates the information to the men that he does not consider the device of sufficient importance to investigate, understand and follow up. It is only natural that the men in turn pay little or no attention to the device and that consequently it fails to serve its purpose.

It should not be necessary for a supply concern to have to send out service men to see that economy devices of their manufacture are properly maintained and made use of by the railroad. Nor should it be necessary for the superintendent of motive power to send out special men from his office to see that such devices are made properly effective.

Knowledge, facts, practical information, are among the few things that can be given away, not only without loss to the giver, but, in fact, with real profit to the giver. A teacher learns faster than his pupils. The knowledge he gives builds up mental reactions in his own mind that make him a bigger and broader man. This being the case, the traveling engineer who is a real instructor not only finds pleasure in helping others to learn, but gains real benefit himself as a result of his instruction.

There are so many methods available for the dissemination of information that every traveling engineer should make use of at least some one of the various methods in his work. Personal instruction while riding engines or while meeting men at terminals naturally forms the primary method of disseminating facts. Many roads have moving picture films of firing practice, etc., which are available for the instruction of their men. Many roads have their air brake instruction and examination car, train rule instruction car, fuel instruction car, a special car for the instruction of men in the proper observance of signals, etc. Then there are the safety meetings and various other get-together meetings.

Traveling engineers on some railroads have adopted the plan of fitting up an instruction room at their terminal where the men can gather for class study and instruction. Others are encouraging groups of their firemen to form classes for the study of those questions upon which they must pass an examination for promotion.

Encourage Home Study

Where there is no systematic plan for the personal instruction of men, home study methods properly supervised, serve a real purpose. A traveling engineer should never recommend a home study course to one of his men without following up his recommendation to see that the man makes use of the service he subscribes for. Home study is difficult for many men and it often requires a word of appreciation and encouragement from a man's superior officers to hold him to his purpose of gaining information by home study.

In closing it is desired to emphasize again the fact that some knowledge of the policy, economics and plan of railroading must be given to the men in addition to routine instruction along purely mechanical lines. Men must be taught costs and values. More than all else, they must be inspired by proper leadership to a desire to do their work safely, economically and efficiently so that they will find pleasure in their work and honor in their profession.

Insurance Company "Looks Into" Stores Practices on Railroads

Criticism and praise characterize Metropolitan company's venture in material studies

BOTH criticism and praise for the manner in which materials and supplies are being handled on railroads characterize a voluminous report which has been published by the Policyholders' Service Bureau—Group Insurance division—of the Metropolitan Life Insurance Company, for the information of holders of its group insurance policies. This report, which was prepared by the bureau after having "looked into" this subject at the request of one of its railroad group policyholders is believed to represent the first instance where

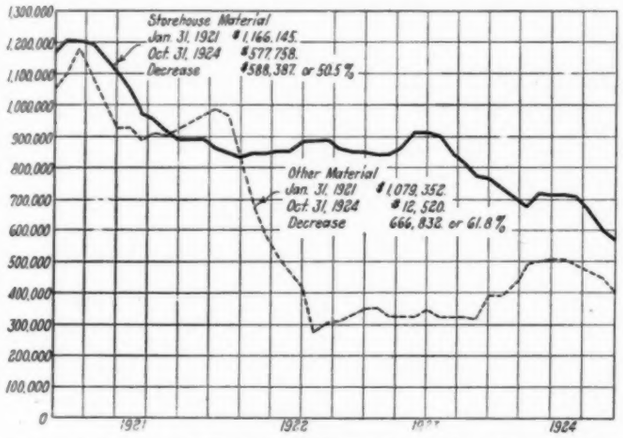


Chart A—Value of Unapplied Material and Supplies on Hand by Months for a Middle Atlantic Railroad

such an organization has undertaken to review railway stores practices. Its authors are Henry Bruere, third vice-president of the company, and Arthur Lazarus, also of the bureau. Common defects in stores practice, savings from efficient material control and stores organization and procedure comprise the scope of the report, which is principally a reproduction or résumé of information received from various roads concerning their practices and accomplishments, the stores organization of the Great Northern, Santa Fe, New York Central and particularly the description of the office methods of the Pennsylvania, being outlined at length. Prominent among the conclusions drawn are that few industries can parallel the railroads in standardization of procedure and that railroads should have outside agencies check up their stores practices. The report is reproduced in part as follows:

The Control of Material

At the request of one of its railroad group policyholders, the Policyholders' Service Bureau looked into the handling of materials by railroads. As the material control practices of one railroad after the other were made available, it was impressive to find how closely the railroads throughout the country have adopted standard forms and rules for railroad stores department operation. While numerous industries have effectively standardized accounting procedure, few can parallel the record of the railroads in adopting a standard procedure for the handling of material.

While the rules and forms laid down for railroad stores department operation have been generally adopted by railroads, it does not follow that railroads have reached perfection in the handling of materials, or that they do not violate good stores practice. It would be worth while for railroads to follow the example of one centrally situated railroad, by having an outside agency check up their stores practice. For example, the engineers engaged by this railroad for the purpose discovered instances of material drawn in quantities far in excess of actual requirements. This material, which included bolts, nuts, washers, spikes and nails, evidently drawn for use in a particular car, was discovered on the ground. Outside a machine shop a quantity of gray iron castings, probably in excess of a month's supply, was found waiting to be machined.

A survey of the yards developed the fact that there were

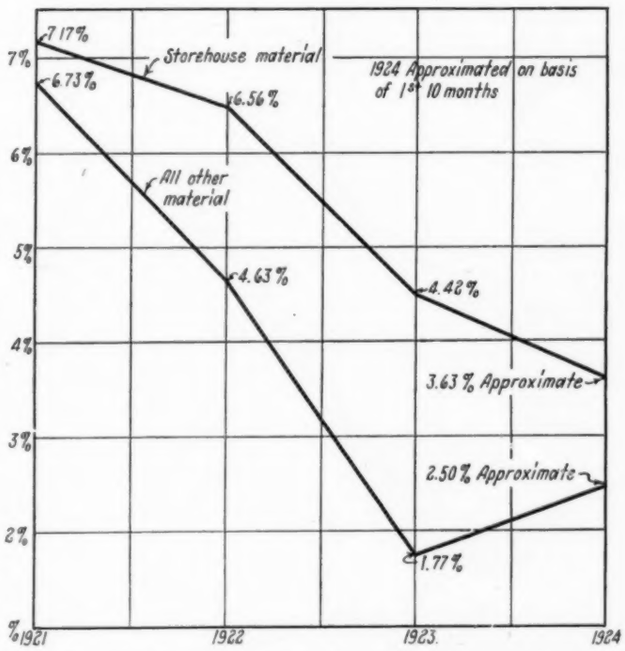


Chart B.—Ratio of Stock on Hand to Annual Gross Operating Revenues for a Middle Atlantic Railroad

large quantities of small material, such as nuts, bolts, washers, roof clips, etc., scattered about which probably represented quantities drawn in excess of actual requirements. Closely related to the drawing off of excessive quantities of material is the requisitioning of material far in advance of need. It was observed that a great deal of new material was in the machine shop awaiting finishing, including material for engines to be shopped, as well as material for shop order work; also brass, iron and steel castings, axles, and crank pins. All this material should

have remained in the hands of the storekeeper until needed, and should have been delivered to the shop only as required.

Material Not Protected

Instances were found where material was not protected from the elements. Finished lumber was piled in the open. Journals of driving axles, crank pins, etc., were stored outside the shop with their finished surfaces badly rusted. Steel bar and plates were exposed to the weather. In one yard, with the exception of a portion of siding and ship lap, lumber was found without covering or other protection, and a number of piles were water soaked in every rain with little opportunity to dry out. Much oak lumber was observed to be badly warped.

It was noted that the scrap contained new and usable material, such as bolts, nuts, brake shoes, brake pins, brake levers, brake rods, lanterns, pipe fittings, valves, etc., in considerable quantities. Material moved from engines undergoing repair was thrown into a heap without regard to whether it was usable or not.

Material in stock was also found scattered too much.

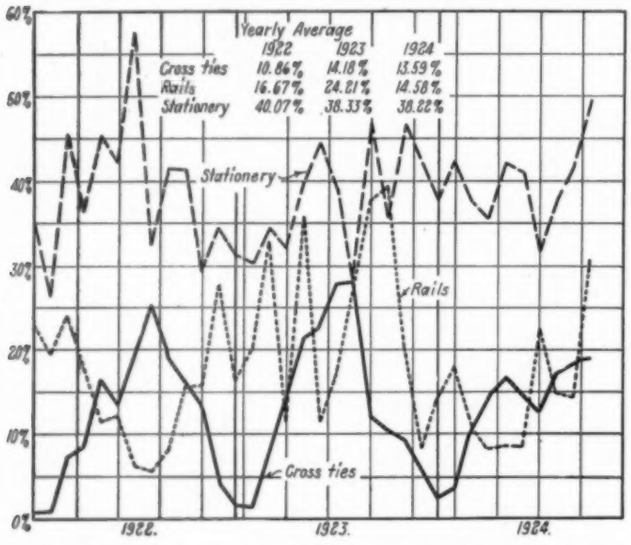


Chart C.—Percentage of the Disbursements of Cross Ties, Rail, and Stationery to Total Stock on Hand for a Middle Atlantic Railroad

In one yard stocks under the control of the storekeeper were located in four different places—in the storeroom, in the roundhouse, on the platform near the power house, on the platform behind the roundhouse, and near the car repair yard. This material could all have been moved to one centrally convenient location, avoiding all excessive labor in handling stores and much trouble in securing the proper charges.

Too Much Handling

In connection with the stripping of cars, it was found that large quantities of material, including roof clips, sill steps, grab irons, etc., were being picked up by shop laborers and moved to the scrap dock, where it was sorted and again placed in service. Usable material might have been moved directly from their stripping to the place of application and the handling of it to and from the scrap dock thus avoided.

Such an inspection is salutary. A standardization of stores practice does not in itself guarantee the economic operation of the stores department.

Effective Handling Has a Dollar Return

The effective handling of the stores department is soon manifested in a dollar and cents return. A fine showing in this respect is indicated in the information supplied the Policyholders' Service Bureau by the Chicago, Great Western. This railroad reduced its material stock from a money value of $1,500,401 on December 31, 1916, to $1,229,582 as of October 31, 1924, in spite of the fact that present costs are much higher today than in 1916. The cost of handling stock was reduced from 7 per cent of the value of the materials to 5 per cent. In October, 1924, the percentage of issues to total materials was 51.79 per cent, indicating a turnover of stock in less than two months.

Other economies were effected by a railroad operating in the middle Atlantic region. As shown in the Chart A, the value of unapplied material and supplies on hand (on this road) January 31, 1921, was $2,245,497, and on October 31, 1924, $990,278, a decrease of approximately $1,255,000. Chart B shows the ratio of monthly average stock on hand to the annual gross revenues (of the same road) for the years 1921, 1922, 1923 and 1924; those of the latter year being approximated on the basis of the first 10 months. This shows a decrease from the high ratio in 1921 of 13.9 per cent of the annual gross operating revenues to 6.13 per cent in 1924. While there may be some doubt as to the close relation between material and supplies and gross revenues, the point to be observed is that the comparison for each year is on the same basis and shows a continuous decline.

Chart C gives for this road the percentages of disbursements of crossties, rail, and stationery to total stock on hand from January, 1922, to October, 1924. The average disbursements of storehouse material increased from approximately 11.3 per cent in 1923 to approximately 23.3 per cent in October, 1924; or, to put it in another way, the value of miscellaneous storehouse material was reduced from approximately a nine-months' supply to approximately a four-months' supply.

STATEMENT SHOWING AVERAGE VALUE OF MATERIAL AND SUPPLIES AS OF DECEMBER 31, 1923

Railway Company	Average value per mile of maintained mileage: Ties	Rails	Fuel	Other material	Total	Average cost per mile of road operated	Per cent of railway operating revenue
Line A	$340.19	$134.28	$235.52	$1,167.55	$1,877.54	$2,760.00	13.62
Line B	110.97	170.31	161.90	690.33	1,133.51	1,754.00	9.25
Line C	411.47	134.64	184.10	966.90	1,697.11	2,488.00	13.66
Line D	162.53	34.72	50.82	729.50	977.57	1,384.00	9.00
Line E	162.80	56.13	77.14	845.81	1,141.88	1,466.00	9.10
Line F	236.70	92.08	101.50	1,465.78	1,896.06	1,930.00	12.18
Line G	239.79	194.46	307.69	1,096.24	1,838.18	2,399.00	14.40
Line H	78.64	62.48	30.23	856.99	1,028.34	1,378.00	8.06
Line I	242.76	141.14	155.15	1,208.26	1,747.31	2,469.00	11.08

To show the efficiency of railroads in the conduct of the stores department a statement is reproduced, giving the average value of material and supplies per maintained mile and per operating mile; also the percentage of material and supplies on hand to gross railway operating revenues for each of nine roads, as of December 31, 1923.

This discloses a variance of from 9 per cent to 14.4 per cent on the relation between railway operating revenue and the value of railway supplies; and a variance of $1,378 to $2,760 in the average cost per mile of road operated for materials and supplies; and a variance of $977 to $1,896 in the average value of material and supplies per mile of maintained mileage. Physical conditions may account for some of these discrepancies, but after due allowance has been made for such irremediable conditions, the figures supplied indicate wide opportunities for improvement in the methods of store procedure of some of the railroads.

Safety Council Holds Annual Congress at Cleveland

Railroad section has record attendance—Education of employees important factor in safety work

THE gratifying progress which is being made on American railroads in the prevention of accidents and the increasing interest which is being manifested in safety work was forcibly brought out during the recent sessions of the Steam Railroad Section of the National Safety Council. These meetings were held at the Cleveland Hotel, Cleveland, Ohio, in connection with the fourteenth annual safety congress, September 29, 30 and October 1. It is difficult to visualize the broad scope of the work undertaken by the Safety Council, though some idea may be gained from the fact that over 4,000 persons attended the meetings of the various sections, representing practically all branches of industry and transportation. The steam railroad section alone had over 300 in attendance at the opening session. Many interesting papers were presented by men prominent in the safety movement on American railroads. The present officers of the steam railroad section are: Chairman, C. E. Hill, general safety agent, New York Central, New York City; vice-chairman, A. V. Rohweder, supervisor of safety, Duluth, Missabe & Northern, Duluth, Minn., and secretary, E. R. Cott, general safety agent, Hocking Valley, Columbus, Ohio.

Chairman Hill in addressing the meeting of the railroad section spoke on "Safety the Conservator of Life," and said in part:

Conservation of Human Life

Fourteen years ago our progress was measured almost wholly in the elimination of physical conditions. The work of accident prevention was of interest, but it had a touch of the inanimate. As time went on we gradually passed into the realms of the human equation. Man has kept pace with progress in that he has modernized machinery, and has put his house in order, but the progress of things which are inanimate brought about through the ingenuity of the human mind has been greater than the progress of man himself. He has neglected to train the mind to meet the new order of things as they exist today.

Thus, we find the human element as the potent factor in our safety program. In analyzing employee casualties we are stunned at the disclosures. When we find that out of the 1,479 employees killed and the 124,655 injured on the railroads of the United States last year that 90 per cent of the entire number was due to the human element—that the fault lies either with the victim or one or more of his co-workers, we then realize what a tremendous responsibility we have.

Where must we start? Certainly we cannot expect the safety spirit to prevail among men who never see its principles manifested in those to whom they look for advice and counsel. The men in the shops, in the yards, in the freight houses, etc., measure the sincerity of their foremen, and their officials, in safety, by the interest displayed by such foremen and officials in directing their attention to the necessity of care and by pointing out specifically how accidents may be avoided. I am glad to say that the leading railroad men of this country are fully in accord with the general policies followed in our efforts to prevent accidents. There does exist, at times, however, somewhere along the line, an apathetic condition which materially retards our progress. * * * It has been well said that the influence for safety in any department of a railroad is just as great as the zeal for its success manifested by those in charge of such departments.

In 1913 there were upon the railroads of the United States 10,964 persons killed and 200,308 persons injured. In 1924 there were 6,617 persons killed (a reduction of 39.6 per cent) and 143,739 persons injured (a reduction of 28.2). This reduction in casualties was made in the face of a material increase in the number of railroad employees, an increase in the volume of freight and passenger traffic, and what is still of greater moment an increase of 167 per cent in the number of casualties at railroad highway crossings. If we confine ourselves to employee and passenger fatalities our record of achievement will show the phenomenal reduction of 58 per cent. The pioneers in safety of 14 years ago met their difficulties and conquered them. The results of the application of a constructive safety program stand as a monument to its builders.

The duty is ours to carry on this great work and it must be pursued with greater zeal than ever before. Where co-operation is greater, accidents are fewer. When every individual that has a responsibility in this program has finally come to a full realization of such responsibility and when his innermost consciousness is aroused we shall witness an era of unprecedented accomplishments in the cause of safety.

We must face the opportunity of service with patience, fortitude, courage, hope and faith, believing that the great army of railway employees of this country will recognize that safety is their friend and benefactor. * * *

Safety and the Shop Man

L. V. Hart, president of the Federated Shop Crafts of the Big Four, spoke on the value of the safety movement to the railroad shop man. His address follows in part:

Whenever we are called upon to defend the existence of this movement we point with pride to the decreasing percentage of accidents. Without doubt, hundreds, yes thousands, of us are working in the shops today, enjoying the best of health, who would either be in our graves or crippled for life, if this movement had not been instituted.

* * * The application of the safety idea in many shops has been a rather discouraging task. It is difficult to convince the mechanic who has been chipping and grinding for 25 or 30 years without any protection to his eyes, the necessity for using that protection. His mind has not been trained along that line. The mechanic of tomorrow, however, is the apprentice of today. His training in the safety movement started with his first day in the shop. He will grow with the movement and will act accordingly. He will no more think of using the emery wheel without that wheel being guarded, than

he would attempt to use it without the power being turned on. After all, the greatest safety device in the world is the human mind. The mechanic of tomorrow will be able to combat the hazards that exist in the shop with practically no effort.

At the time this movement was introduced on railroads a feeling of distrust existed between management and employees. Any movement suggested by one was looked upon with suspicion by the other. When the safety movement was introduced by management it was no exception to the rest. A substantial majority of the employees looked upon it with suspicion. They felt that the company had some ulterior motive back of it.

Months passed and finally years but the ulterior motive failed to materialize. The employees began lending their co-operation, lightly at first, then stronger and stronger. They realized the management did mean just what they stated when the movement was first introduced. We attended conference after conference where employee and management sat around the table discussing frankly the things that should be done to make the shop a safer place to work in. We erased the imaginary line of demarcation that had always existed between the management and employee and we conducted ourselves as human beings, all placed on this earth for a very short time at the longest, and all striving toward the same end—to make this short life a brighter and happier one.

F. Hartenstien, assistant to general manager, Lehigh Valley, Bethlehem, Pa., spoke on the subject of, "Why Are We Assembled—What Is Our Goal?" Both he and L. P. Green, superintendent of safety, Minneapolis, St. Paul & Sault Ste. Marie, Minneapolis, Minn., who led the discussion of the paper, emphasized the importance of properly educating all employees in safety measures and brought out the fact that it may be ultimately necessary to make use of mandatory measures in dealing with some men who do not seem to be inclined to play the safety game with others.

The Past and Future of Railroad Safety

T. H. Carrow, supervisor of safety, Pennsylvania, Philadelphia, Pa., presented a paper entitled: "Railroad Safety, Past, Present and Future," which embodied a great deal of information ordinarily presented in the regular report of the committee on statistics. Some of the more important things brought out in Mr. Carrow's paper are as follows:

What is safety? The dictionary says "freedom from danger," but that meaning is not applicable to railroad safety, because you can't be absolutely free from danger on a railroad. I would substitute *mastery of danger* as an appropriate definition of safety. Mastery means the development of a state of mind in which the precaution necessary to insure personal safety is automatic and constant. That thought is embodied in St. Paul's admonition, "Let him that thinketh he standeth take heed lest he fall" and, in the vernacular, we mean the same thing when we say "watch your step." Safety consists first in seeing danger either with the physical eye or with the mind's eye and then getting out of the way of it, or removing it.

The extent of the Safety problem on the railroads of the United States is indicated by the accident record. The figures for 1924, which are considerably below the average, are shown by classes of persons as follows:

	Killed	Injured
Passengers	149	5,354
Employees	1,533	124,882
Trespassers	2,556	2,853
Persons at highway grade crossings	2,149	6,525
Other persons	230	4,125
Total	6,617	143,739

It will be noticed that 2,556 or 38 per cent of those killed were trespassers who had no right to be on the railroad and 2,149 or 32 per cent were persons killed at highway crossings who failed to use reasonable care.

As a direct result of injuries to persons it is estimated that the railroads are put to an expense of upwards of forty million dollars yearly, not counting the cost of interruption to traffic, of breaking in new employees and other incidental expenses. The effort necessary on the part of the railroads as well as the public to prevent these accidents as far as possible represents the extent of the Safety problem.

The records show 52 per cent fewer passengers accidentally killed in the year 1924 than in 1888, the first year for which there is any record, although passenger mileage was more than trebled between those dates. Also, fewer passengers sustained non-fatal injuries last year than in any other year since 1902.

Twenty-six per cent fewer employees were killed last year than in 1888, while the number of employees in service increased from 700,000 to almost 2,000,000. Prior to 1916 a yearly average of 5,000 trespassers were killed and about an equal number were injured; the record for last year shows only half this number of casualties to trespassers.

These reductions have been made despite the fact that during the 36 years between 1888 and 1924 the speed of trains, density of traffic and weight of cars and locomotives have greatly increased.

Reductions in casualties of over three days' disability by individual shops, stations, yards and railroads also illustrate progress in accident prevention. One shop, for example, with 450 men worked 18 months, making 1,492,668 man hours, with only one injury, compared with 54 injuries in the previous 18 months. Another shop with 900 employees had 13 casualties during the first 6 months of 1925 compared with 49 in the same period of 1924. A freight station with 515,408 man hours had an accident rate of .58 per 100,000 man hours first six months 1925 compared with 1.10 same period 1924. A yard having 492,671 man hours had a rate of 2.64 per 100,000 man hours first six months 1925 compared with 3.85 same period of 1924. These figures become more impressive when compared with the record of a shop with 1,000 men which had 275 injuries during a period of six months before safety work was started.

It is not possible to accurately estimate the additional improvement that can be made, but including the reduction made last year, it is assumed that a reduction of 35 per cent by the end of 1930 is feasible. * * * How further to reduce casualties can be treated under two general heads, namely, (1) Causes of accidents and preventive measures and (2) the make-up of a man. The first head may be described in abstract as—

Causes	Preventives
Physical Conditions: Defective material and equipment, lack of safeguards, litter or other physical hazards.	*Physical Conditions:* Improved design and construction, better maintenance and installation of necessary safeguards.
Human Factor: (a) Violation of rules and other forms of negligence.	*Human Factor:* (a) Improved training, supervision and discipline.
(b) Carelessness, thoughtlessness, indifference, ignorance or physical and mental unfitness and misadventure.	(b) Safety organization, education, persuasion, co-operation and first aid and medical attention.

It is estimated that 85 per cent of all injuries on the railroad fall under the classification Human Factor "b." Accidents from these causes provide the biggest field for safety effort, though it is at once the most difficult field to cultivate. However, experience is not lacking to demonstrate that by the application of the preventive measures given under *b*, the results that have been achieved in the prevention of accidents due to violations

of rules or other forms of negligence can be accomplished with respect to accidents due to carelessness, thoughtlessness, indifference, ignorance or physical and mental unfitness and misadventure. The shop, the yard, the station, the division or the railroad that uniformly and continuously employs these remedies will inevitably reach the safety goal.

The Make-Up of a Man

It is a common tendency to draw a mental picture of a mass of buildings, track, equipment and human beings when we think of the railroads as a whole, as well as when we think of our individual roads. The fact is, railroads are not operated by a mass of men, but by a large number of individuals, each of whom possesses a combination of characteristics peculiar to himself and whose best effort can only be brought forth on his specific job by bringing to bear upon him the proper sort of influences, and if there is any point that needs to be emphasized in safety work more than any other it is that only by bringing each individual into the safety fold can the entire organization be made safe.

THE MAKE-UP OF A MAN

Physical	Mental	Moral
Positive	*Positive*	*Positive*
Health	Understanding	Appreciation of the right.
Strength	Judgment	Desire to do the right.
Skill	Reason	Dissatisfaction with wrong.
"Quick to act"	Perception	
Eyesight	Apprehension	*Negative*
		Indifference.
Negative	*Negative*	Carelessness.
Disease	Natural	Perversity.
Weakness	Limitations	Recklessness.
Clumsiness	Forgetfulness	"Don't care."
Awkwardness	Dullness	Lack of precaution.
Laziness		
Poor eyesight		

A man may be studied and analyzed with the same particularity with which machines are, and while the results may not be as specific they serve the purpose for making an approximate classification. The three principal parts of a man's being are (a) physical, (b) mental and (c) moral, and each part has a positive and a negative side. The extent to which the positive side is developed represents the degree of success achieved in rendering ineffective his negative side, the side to which nearly all accidents are attributable. Here the fact should be emphasized that it is impossible to eliminate negative tendencies or characteristics and the only way, therefore, to overcome them is through the development of the positive ones. A man cannot be careful and careless at the same time; therefore, the remedy for carelessness part of the time is carefulness all the time.

The first step in securing men of proper physical condition is medical examination and selection of only applicants suitable for the jobs to be filled. The second step is to provide working conditions conducive to health and strength and the third step is to see that the health and strength of employees are conserved. With these several features attended to, disease and all the other negative characteristics of the physical man will be overcome as far as it is humanly possible and the accidents arising from the impaired physical condition of employees will thus be minimized.

The Mental Man. The railroads can draw up specifications for machines and material and thus obtain the kind desired, but when hiring employees all that can be done is to take the best available from those who apply for work. It is therefore important that the understanding, judgment, reason, perception and apprehension of those who are selected for employment be developed to the fullest extent. If this be done the negative side of the mental man, namely, natural limitations, forgetfulness and dullness will be overcome to a considerable extent. This feature of safety work obviously presents a large field for intelligent effort, particularly from the standpoint of individual instruction and supervision.

The Moral Man. A man may be physically sound and possessed of a highly developed mentality with his moral nature undeveloped. This constitutes a serious impediment to safety. Fundamentally safety is right and proper and merits the moral support of everybody, but unfortunately there are many employees who do not appreciate this fact and are therefore indifferent to and take no active part in safety. * * * After all safety is not abstruse, nor is it difficult to understand, and perhaps no avenue of approach will lead more directly to success than the approach through the moral nature of railroad men.

With an amplification of the suggestions presented and an intensive application of the preventive measures outlined by all roads the 35 per cent reduction in railroad casualties, the goal established by the Safety Section A. R. A. will be assured.

A Pullman Record

R. G. Morris, supervisor of safety, Pullman Company, Chicago, Ill., discussed safety work in connection with car cleaning and switching in terminal yards and emphasized certain conditions which have been responsible for accidents. He said in part:

During the month of May, the Pullman Company conducted a "no-accident campaign" among its yard and shop employees, the result of which we think was very satisfactory. Out of 219 yards, 209 went through the month without a lost time accident, which means not a day lost. There were only 12 lost time accidents in all the yards, none of which were serious, although there were more than 7,000 men and women employed. The yards worked 1,348,302 hours and handled 6,439 cars. The five repair shops, with a combined force of about 5,000 persons, went through the month with only five lost time accidents, none of which were serious. Calumet Shop alone handled 165 cars, five of which were general repair cars.

Many accidents are due to the following conditions: [Mr. Morris here cited the causes of accidents, well-known, and also some not so common. For instance:] Pulling cars without giving notice to employees working on ladders and horses. Pulling trains out of yards before cleaners can get off, thereby causing them to get off after train starts. Leaving obstructions on car steps and platforms. Leaving brake handles sticking out in vestibule platforms. Throwing glass and other things out of car windows and off of platforms. Pushing up trap doors without fastening them.

N. S. C. a Pioneer

R. H. Aishton, president, American Railway Association, told of the excellent safety work which has been done by the steam railroad section of the National Safety Council, but deplored the increase in highway grade crossing fatalities. Mr. Aishton said in part:

To the National Safety Council belongs the honor of the first organization of railroad workers in the safety movement, in 1915. You recognized the necessity for co-operative effort. What have you accomplished in the 10 years? During the three-year period, 1912 to 1914, the figures of the Interstate Commerce Commission showed 10,617 fatalities per year. During the past three years, 1922 to 1924, the corresponding figures show a reduction to 6,776 per year, and this notwithstanding the constant increase in population, in traffic, in motor traffic on highways and in other factors. In other words, through the combined efforts of the railway companies, of the employees, and of the public, you are saving every

year not only 3,841 actual lives, equal to the population of a good-sized town, but God only knows how much misery you are saving the dependents, families and friends of these people whose lives would have been sacrificed but for your efforts.

In relation to the population, the number of railway fatalities was reduced 45 per cent. The decrease in fatalities was uniform for all classes of persons involved, except motorists at grade crossings. It is evident that the hope of reducing the number of personal injuries and fatalities on our railroads lies largely in converting the driver of our modern motor car to a realization of the fact that not only *may* he lose in his race with the locomotive to the crossing, but that he is almost *sure* to lose, and that in any case he is indulging in a huge gamble with the most precious of human possessions at stake, namely, his own life and the lives of those in his car.

Eternal vigilance is the price of human safety as well as of human liberty. We live in an age of machines which year by year grow bigger and more powerful and move at accelerated speed. These machines are made to be our servants, but they must still be controlled by the human hand and will. Always somewhere along the line there is still a human factor which must be safeguarded. * * * Continue your good work, co-operate with every agency which is working in this direction, supplement their work; there is a field for all of you with but one objective, and that is a happier, better and safer world for all of us to live in.

The Foreman and Safety

F. W. Mitchell, director of personnel, New York, New Haven & Hartford, presented a paper dealing with the foreman and his relation to the safety movement. An abstract of Mr. Mitchell's paper follows:

Every foreman should recognize that he bears the same relation to safety that he does to production. Tests and experiments, of unlimited variety and exacting requirements, have been made to secure mechanical standards that will insure safe operation of equipment in the hands of careful operators. The problem of educating the human element to maintain these standards is now recognized as one that can be handled with assurance of securing definite results. Education without a teacher is a slow, expensive and unsatisfactory process; therefore, the foreman must be a teacher of safety. He must observe, study and plan. He will have to grow with the job, or be outgrown by it. The foreman must be a man of open mind, a man of vision, whose serious thoughts are aroused by what he sees and hears—sometimes even by suggestions of no intrinsic worth. Many valuable inventions have been suggested to thinking men by the passing expressions—sometimes even by the foolish talk of the simple or the superficial thinker.

The foreman who would lead in the field of education must be well supplied with experimental knowledge of methods, materials, tools and other equipment, and acquire tact in handling men—both individually and in groups, together with the ability to impart his knowledge to others. It is the foreman who interprets the management to the men. This he does, not when he posts the notices and rules that are issued from time to time: these speak for themselves; but in his own attitude toward the men, and toward all sides of the question of regulating human conduct. He must realize that not only his words but his actions are closely scrutinized by these men, to see what they can discover that supports or denies the profession of his lips. He must not break rules that should bind him with an obligation as strong as they do the men whom he supervises.

One difficulty in training the foreman lies in securing his recognition of the fact that he may need such training, after his years of experience. If he has been only a cog in the machine, initiative has been suppressed; he has learned to do almost everything but think and talk frankly about his job; the road to his imagination and confidence is overgrown with suspicion and nearly impassable. Such men have fallen into the habit of using wild gestures of the tongue in place of constructive talk and have failed to acquire any perspective of their work. Recovery is not easy. To the intensely practical type of thought, that demands something with length, breadth and thickness in explanation of every accident the idea that safety is a state of mind may not appear quite satisfactory at first. It is, notwithstanding, fundamental in securing the best, or even good, results in accident prevention. "As a man thinketh, so is he." On this foundation rests the foreman's relation to safety. Its growth is governed by the capacity of the foreman to learn and the use he makes of his opportunity to teach.

Other Addresses

W. G. Lee, president, Brotherhood of Railroad Trainmen, in discussing the benefits accruing to the railroad trainmen due to organized safety upon the American railroads, dwelt upon the difficulties which were encountered in carrying out safety educational work in the early days of the movement. Mr. Lee was one of the first railroad labor leaders to visualize the possibilities of safety work among employees, and in his talk quoted some figures which illustrated the results of safety work in reducing the number of accidents among train service employees. He expressed himself as being heartily in accord with the efforts of the railroads to reduce to a minimum the hazards of transportation service.

Carl R. Gray, president, Union Pacific System, told of the excellent results of safety work on that road, and expressed the opinion that the ultimate success of safety work must depend not only upon the efforts of those in the ranks who are directly engaged in this work, but also the whole-hearted co-operation and personal interest of the executive and general officers of the railroads as well.

Registration

The registration of the Steam Railroad Section of the National Safety Council greatly surpassed that of previous years, there being in attendance over 300 members of this section representing 51 different railroads. Among the larger delegations of safety workers in attendance were those of the New York Central Lines, which had 113 members and guests present; the Baltimore & Ohio with 26; the Pullman Company with 17, and the Union Pacific with 11.

Election of Officers

The following officers were elected for the ensuing year: Chairman, A. V. Rohweder, supervisor of safety, Duluth, Missabe & Northern, Duluth, Minn.; vice-chairman, J. D. White, safety agent, Illinois Central, and secretary, E. R. Cott, general safety agent, Hocking Valley, Columbus, Ohio.

THE CHICAGO BOARD OF TRADE has issued a 13-page illustrated booklet entitled, "The Box Car and Its Abuse," which contains suggestions for the remedy of the grain leakage evil. The book is divided into three subjects which are, The Rough Handling of Cars by Railroads, The Use of Cars That Are Unsafe and Unsuitable for Carrying Grain in Bulk, and Omissions and Carelessness on the Part of Those Who Prepare and Load the Cars. The pamphlet has been distributed to 5,000 grain dealers in the United States and Canada.

Signal Section Holds Successful Meeting at West Baden

Cost of train delay, contracts, and instructions for inspections among subjects discussed

THE Signal Section of the American Railway Association opened its three-day annual stated meeting at 9 o'clock on Tuesday, September 29, at the West Baden hotel, West Baden, Ind. W. M. Post, assistant chief signal engineer, Pennsylvania Railroad, chairman of the section, presided. Although the major portion of the program was devoted to the presentation and discussion of the ten regular committee reports, one special report by A. H. Rudd, chief signal engineer, Pennsylvania, on highway crossing protection, and other papers furnished interesting additions to the routine procedure. Other papers presented include those on Signal Valuation, by G. E. Beck (N. Y. C.); Lightning Protection, by H. M. Towne (General Electric Company); Developments in Galvanizing Iron and Steel Wire, by F. M. Crapo (Indiana Steel & Wire Company); Caustic Soda Cells, by H. M. Himes (B. & O.); and D. C. Track Circuits, by J. B. Wiegel (L. & N.).

Several members of the American Association of Railroad Superintendents were present and contributed valuable discussion on the report of the Economics of Signaling.

C. C. Hine, general solicitor, Chicago, Indianapolis & Louisville, gave an address of welcome on Tuesday morning. He mentioned that even in his memory signaling had been considered as unimportant to railroading, but now this field requires men of technical knowledge and executive ability in order to provide equipment that will protect train movements and facilitate traffic.

Report on Economics of Railway Signaling

This committee presented a summary of the papers on train operation by signal indication which were read at the meeting in Chicago in March, this to facilitate ready reference in the records. However, the major part of the report was devoted to the methods of determining the possible saving in train hours to be effected by block and interlocking signals, of which the following is an abstract:

Train Delay Hours

Method of Determining the Possible Saving in Train Hours to be Effected by a Signal System

To determine this possible saving, there is required:

1. Determination of cross section of present traffic.
2. Train hours per year of present traffic.
3. Determination of representative future traffic.
4. Train hours per year of future traffic.
5. Details of proposed signal system.
6. Train hours per year of future traffic with proposed signal system installed.
7. Train hours of representative future traffic saved per year by proposed signal system. This is represented as follows:

A=Present average number of trains per day.
B=Present average hours per train.
C=Percentage of change in daily number of trains. (Future increase or decrease over present daily average).
D=Expected average hours per train after installation of signals.

Then,

Savings in train delay hours per year=365 ACD minus 365 ABC.

1. Determination of Cross Section of Present Traffic.—Prepare a study of present operating conditions. The data for this is best secured by having an observer ride over the district which is under investigation and make complete logs of the movements of a number of trains; included in this log should be time readings as the head of the train passes certain points along the road, such as mile posts, bridges, passing siding switches, railroad crossings, or other points which afterwards can be identified on a profile or map of the territory.

There is a variation in the relative movements of the head end and rear end of a long train; there is approximately 0.9 ft. of slack per freight car so that in a 100-car train there would be an average of 90 ft. of slack movement which results in the movement of the head end and the rear end not being consistent. It is, therefore, desirable that the observer ride the head end of train in order that the log may give a true record of the engine travel and also that the plotted results may be uniform; if the observer should ride the rear end, many stops could not be accurately plotted because of the influence of this slack action. All orders received by the crew of the train under observation should be carefully scrutinized by the observer and their effect noted. After the trip is completed, a conference with the dispatcher will then reveal the difference in actual performance as compared with the performance contemplated by the dispatcher when he issued the orders.

A study of about four trains in each direction of each different class of traffic should be sufficient and the result should be plotted on a chart similar to Exhibit "A." It will be noted on this chart that the time space for each direction is one hour divided into one minute intervals. The records of the various trains are plotted without regard to the time of day or the different days; they are shown solely with reference to minutes past the hour.

When plotting this chart it is essential to show the cause of each stop or reduction of speed, such as:

(a) orders; (b) meeting or passing other trains; (c) work; (d) accidents; (e) block; (f) slow track; (g) equipment failures; (h) inclement weather.

There can then be determined, by measurement from Exhibit "A," the lapsed time required for the purpose of: (a) securing orders; (b) taking water or fuel; (c) stopping at non-protected railroad grade crossings; (d) taking siding; (e) running from station to station if stops were eliminated; (f) spacing account manual block; (g) average speed while running.

These factors are desirable for a proper replotting of train movements under a different method of operation; in fact, it is almost impossible to replot a movement unless they are available.

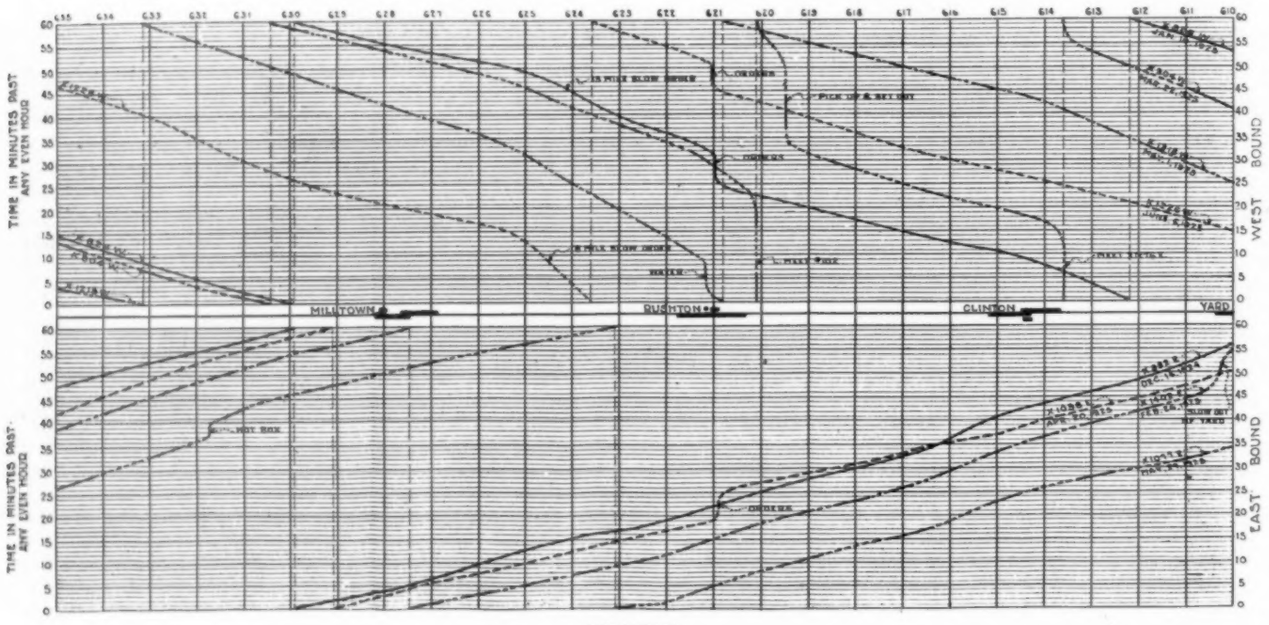
2. Train Hours Per Year of Present Traffic.—Prepare a train chart showing the present train operation for a 24-hour period as indicated by full lines on Exhibit "B." Data for this chart may be secured from the dispatchers' train sheets and conductors' delay reports supplemented by such information as was secured and shown on Exhibit "A." It is also desirable to confer with dispatchers and trainmasters, particularly with reference to train movements at stations where there is no operator.

A similar chart should be prepared for six or eight dif-

ferent days spread over as long a period of time as possible in order that the average may be considered typical of operations throughout the year.

It will be noted that the chart includes more than 24 hours. This is necessary in order that each train movement may be carried back to its starting point and time. It will be found that when replotting the train movements under the proposed signal system, that in some cases the savings in delay hours will be sufficient to cause the train to reach the end of its run prior to the beginning of the 24-hour period and consequently will eliminate any interference that it might have caused to opposing trains within the 24-hour period.

For these charts (full lines on Exhibit "B") determine



West Bound				East Bound			
× 826 W.	January 10, 1925	15°	Clear	× 892 E.	December 16, 1924	22°	Snow
× 904 W.	March 22, 1925	38°	Rain	× 1402 E.	February 26, 1925	15°	Clear
× 1218 W.	May 1, 1925	56°	Clear	× 1058 E.	April 20, 1925	62°	Rain
× 1226 W.	June 6, 1925	74°	Clear	× 1077 E.	May 27, 1925	68°	Showers

Exhibit A—Chart Showing Analysis of Train Movements on Middle Subdivision

the gross time per train from terminal to terminal; or from terminal to end of 24-hour period; or from beginning of 24-hour period to terminal, as the case may be. This can be either measured graphically or can be calculated. An average of the charts will give the train hours per day (number of trains times gross hours per train) which, multiplied by 365, gives the average train hours per year of present traffic.

3. Determination of Representative Future Traffic.—Secure from the records the average number of trains per day that have been operated during some past period, for instance 10 years. Determine whether the rate of increase or decrease that obtained during that period can be expected to continue for a like period in the future, or whether other conditions may influence this factor; it is desirable to secure opinions from the higher operating officials, as an increase in size of motive power, reduction of ruling grades, diversions of traffic and the like, will have their effect on future traffic. This will give the necessary data to determine the average number of trains per day that may be expected to be operated for a period in the future.

4. Train Hours Per Year of Future Traffic.—By applying to this number of future trains per day, the present train hours per trip and multiplying by 365 it will give the average train hours per year of future traffic.

5. Details of Proposed Signal System.—Prepare a plan of the proposed signal system. Some of the features to be determined are:

(a) If double track, is line to be signaled as two single tracks, or for one direction, on each track?

(b) If single track, does A. P. B., overlap, or a modification of either offer the most advantages?

(c) Are any non-protected railroad grade crossings to be interlocked?

(d) Are any switches to be controlled from a remote point?

(e) Would a change in or addition to passing sidings or water and fuel stations cause some particular system of signaling to show more advantages?

(f) Will signals be used to displace or reduce the number of train orders?

(g) Will take-siding indications and other similar devices be used to give information to trainmen?

6. Train Hours Per Year of Future Traffic with Proposed Signal System Installed.—Make a study of operating conditions as they may be expected to exist after the installation of the proposed signals. Use time data from chart (Exhibit "A") wherever any delay time can be eliminated due to any of the following causes:

(a) Elimination of any or all train orders.
(b) Interlocking of railroad grade crossings.
(c) Installation of remote control of switches.
(d) Changes in location or lengths of passing sidings.
(e) Changes in fuel or water stations.
(f) Starting trains out of terminals at a different time.
(g) Unequal spacing of manual block.

Prepare new train charts to show the proposed operations after the installation of signals. This can be best done by plotting the revised movements by means of broken lines on the same chart on which are shown the present movements. (Shown by dash lines on Exhibit "B"). If this revised movement does not show any

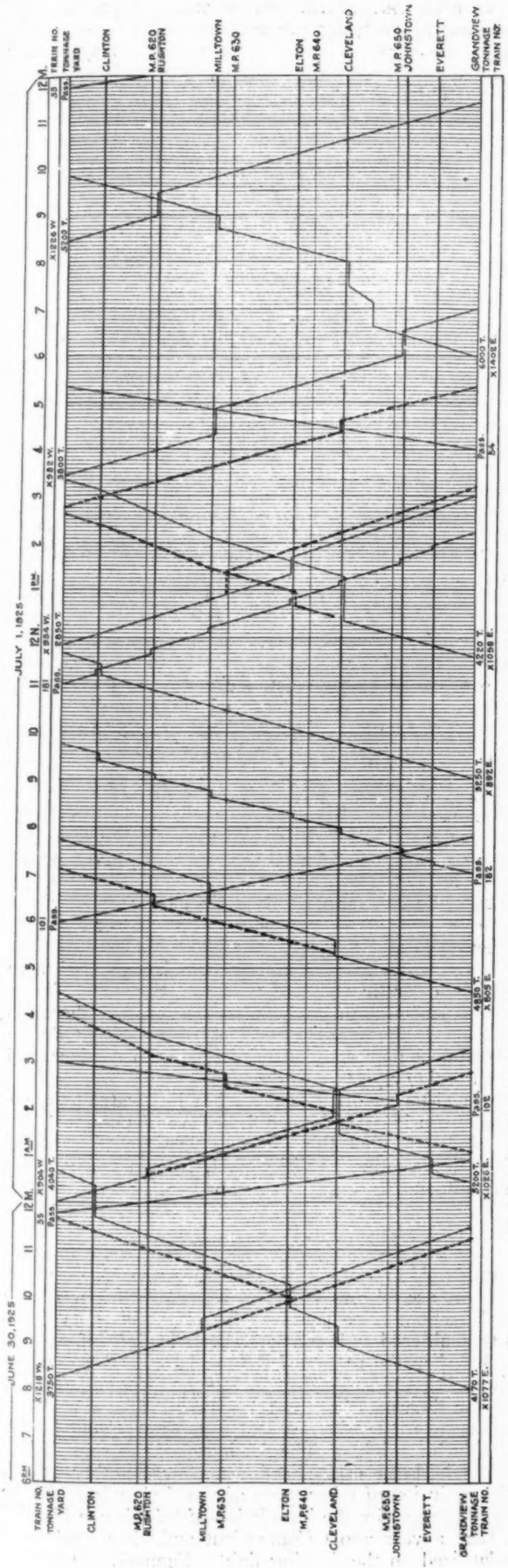


Exhibit B—Chart Showing Present Train Operation and Possible Operation After Installation of Signals

change for an individual train over present movement, then the full line should be used to represent the present and the proposed movement.

In plotting the movement with a proposed signal system, care should be exercised so as not to include any savings in delay time that cannot be substantiated; on the other hand, every advantage should be taken of methods or devices in successful use.

If the chart showing the present operation should include any delays account of accidents, equipment failures and the like the same loss of time must be used in the proposed operation and it must be shown at the same location regardless of the time.

When plotting these revised movements it is necessary to carry each train back to its starting point, as was done with the present movement, and for the same reasons.

7. Train Hours of Representative Future Traffic Saved Per Year by Proposed Signal System.—From chart (Exhibit "B") take number of trains and gross time per train, as follows:

	Before the installation of automatic block signals			After the installation of automatic block signals		
		Train hours			Train hours	
Trains daily	Train miles	Hrs.	Mins.	Train miles	Hrs.	Mins.
		Westward			Westward	
No. 55	40	0	53	40	0	53
X904W	50	3	15	50	2	45
No. 101	50	1	50	50	1	50
No. 181	50	3	15	50	3	15
X954W	50	3	10	50	3	18
X982W	50	3	35	50	2	35
X1226W	50	3	0	50	3	0
No. 55	10	0	15	10	0	15
		Eastward			Eastward	
X1077E	4	0	40	..	..	..
X1026E	50	4	03	50	3	04
No. 102	50	1	0	50	1	0
X805E	50	3	15	50	2	35
No. 182	50	2	45	50	2	45
X892E	50	2	40	50	2	40
X1058E	50	3	45	50	3	0
No. 54	50	1	20	50	1	20
X1402E	50	3	50	50	3	50
Total	754 miles	42 hrs.	31 mins.	750 miles	38 hrs.	05 m.

Before the Installation of Automatic Block Signals:

Average number of trains per day at 50 miles per trip equals 754 miles divided by 50 equals 15.08 trains.

Average time per trip equals 42 hours 31 minutes divided by 15.08 equals 2 hours 49 minutes.

The train miles and train hours *before* the installation of signals are the averages taken from the charts for the six or eight days previously referred to and are to be considered as typical of the present day operation.

Assume that the number of trains per day during the past period increased at the rate of 8 per cent and that this rate will continue for a period in the future. Then on this basis the representative future traffic will be 15.08 trains per day increased by 8 per cent or 16.3 trains. The train hours for this number of trains under their present method of operation (before signals were installed) will be 16,758 train hours per year (16.3 trains times 2 hours 49 minutes times 365 days).

After the Installation of Automatic Block Signals:

Average number of trains per day at 50 miles per trip equals 750 miles divided by 50 equals 15 trains per day.

Average time per trip equals 38 hours 5 minutes divided by 15 equals 2 hours 32 minutes.

Applying the 8 per cent increases the 15 trains to 16.2 trains per day. For this number of trains under the proposed method of operation (after the signals are installed) there will be 15.031 train hours per year (16.2 trains times 2 hours 32 minutes times 365 days).

Summary.—Decrease in train hours per year after installation of the automatic block signals:

Train hours before installation	16,758
Train hours after installation	15,013
Difference	1,745

This decrease of 1,745 train hours per year represents a saving in train time following the installation of the automatic block signals of 10.4 per cent.

Discussion

B. T. Anderson, Chesapeake & Ohio, chairman, said that the report covered the results of a study of actual conditions on certain divisions. He stated that the committee had made a study of a division on another road, where operation of trains by train order was so efficient that no increased capacity could be expected by an installation of automatic signals. However, it was found that on account of about 20 movements being made into and out of certain passing tracks each day, that installation of remote-operated switch machines, with signal protection, is being considered as the best means of facilitating traffic.

C. A. Mitchell, superintendent, Hartford division, N. Y., N. H. & H., said that as a member of the Train Rules Committee of the Superintendents' Association he had assisted in promoting the recommendation that the use of the "31" train order be abolished in favor of the "19" order. However, in making later studies it appears that a further step—eliminating written train orders and operating trains by signal indications—would be economical. Mr. Mitchell said that operating officers should consider it their duty to make a study of operating trains by signaling and be prepared to bring to the attention of higher officers the advantages of such facilities.

G. J. Derbyshire, superintendent, Chesapeake & Ohio, said that a heavy freight traffic is being handled on a busy single track division of his road by means of "19" orders, but that plans are being prepared for signaling to be installed, principally as a means of increasing safety. A signal indication giving a train authority over a piece of track requires the attention of the engineman for an instant only, whereas with a written order action thereon is taken at various times after receipt.

F. M. Brown, superintendent, Pittsburgh & Lake Erie, said that in the old days increased track capacity was secured by additional tracks to the extent that many such tracks are not utilized to capacity and that in many cases the right solution is to install signals.

Mr. Burdette, superintendent, Chicago Terminal, Chicago & Alton, said that in his opinion signals could be used to facilitate traffic so as to introduce a reduction in train hours and equivalent car mileage which will represent a saving that will soon pay for the signals. The proper co-operation between operating and signal officers will bring to the attention of railroad managements the accomplishments possible with signaling.

T. S. Stevens, signal engineer, Santa Fe, said that signal indications could be provided to direct various movements but that advance information must be available as to where trains are to head in or pass. Manual block may be ideal for this purpose but the cost is too heavy. The rules committee of the Superintendents' Association can be of assistance to the Signal Section in determining the means of providing advance information as to where trains are to be moved.

Report on Instructions

Sets of instructions for the testing of electric locking at interlocking plants and for the testing and inspection of mechanical locking were a part of the report of the Committee on Instructions. The general adoption and use of these instructions will insure efficient and thorough inspection. These instructions were approved for presentation at the annual meeting.

The committee recognizes that it is not only desirable but necessary to furnish a course of study for those employees whose previous education or training is not sufficient to give them a clear understanding of the signal courses which are being prepared. It is also desirable to outline a complete course for those who may desire to equip themselves to handle the engineering problems arising in the signal department and thus be ready to assume the more responsible positions requiring technical training. The committee has, therefore, outlined two courses preliminary to work on signaling. The first course includes the mathematics and electricity necessary for the men in the field. The second includes the higher mathematics, etc., necessary to handle engineering problems. This committee has also started the work of compiling a cyclopedia of definitions of technical terms used in signaling, the portion up to and including words starting with the letter *C* being now completed. The reports on these assignments were accepted for discussion and as information.

Report on D. C. Automatic Signaling

Discussion and suggestions of value were included in the report of the Committee on D. C. Automatic Signaling on the prevention of sweating of relays and mechanism cases, lightning on track circuits, and the effect of treated ties in track circuits. A practical method of testing the electrical characteristics of insulated rail joints was explained. Discussing treated ties, the committee says:

Treatment with zinc chloride, sodium fluoride and similar preservatives of chemical salts render ties comparatively highly conducting. Unless combined with some other material, such as creosote, these salts gradually leach out, particularly in damp climates, and eventually their influence on the resistance of roadbeds disappears. The use of ties so treated should be restricted to territory on which no track circuits are in service. If impossible to avoid their use in track circuited territory, they should be allowed to season for a period of not less than 3 months, preferably 6 months or more, before being placed in the track. If the use of unseasoned ties cannot be avoided, not more than 10 per cent should be renewed annually in track sections 3,000 ft. or less in length and a proportionally smaller percentage in longer sections. If ties are seasoned as recommended herein, 15 per cent may be renewed in a section not over 3,000 ft. long.

Ties treated with coal tar creosote have a resistance somewhat lower than that of untreated ties, but it is felt that track circuits can be operated successfully where ties treated by this process are installed. Any benefit due to this treatment may be considered as due to the increased life of the tie or postponed decay.

The resistance of ties treated with water gas tar measures considerably higher than than of untreated ties, which indicates that this impregnating material affords additional insulating qualities, and, from a track circuit standpoint, ties so treated should be used in preference to all others.

Highway Crossing Protection

Considerable progress has been made towards standardization in accordance with the recommendations of the Signal Section. Hearings have been held in several states and the subject is a live one. The following information is included in the report of the special committee on this subject.

At the date of this report (July 3, 1925), some commissions favor the wig-wag and some the horizontal alternately flashing lights. The sentiment of the commissions is gradually being crystallized on one or the other or both to the exclusion of other types of visual signals, while the tendency to require the installation of bells is considerably less than a year ago. Connecticut and New York have standardized on the flashing light. Pennsylvania prefers

the flashing light, but approves the wig-wag if one is installed on each side of the railroad. Many of the other states prefer the flashing light, but will not require it to the exclusion of the wig-wag. The public service commissions throughout the southeastern part of the United States have not failed to approve installations made in accordance with the Signal Section recommendations. The Board of Railway Commissioners for Canada has standardized on the three-aspect wig-wag for future installations of automatically protected highway crossings. It is expected that California will standardize on the wig-wag. As a result of meeting held April 17, 1923, the New Jersey Commission standardized on the horizontal flashing light or wig-wag. Rhode Island and Massachusetts permit the installation of the flashing light but have not officially approved it. A large number of the western state commissions prefer the wig-wag type, the Union Pacific having standardized on that type.

On June 9, 1925, the Public Service Commission of Pennsylvania approved an agreement between the secretary of highways and such railroads as might become parties thereto for the protection of the crossings of the primary State highway system with the railroads, to cover crossings which, in the opinion of the commission, would be adequately protected by automatic devices pending grade separation, substantially as follows:

At crossings where all vehicles could be required to stop, without causing congestion of traffic, the highway department to erect, operate and maintain stop signs, equipped with two horizontal flashing lights, flashing together constantly, the railroad to pay one-half the cost of installation.

At crossings where congestion would occur by such stoppage of vehicles, railroads to erect, operate and maintain horizontal alternately flashing lights or wig-wags, (one on each side of the railroad) to indicate the approach of a train, the highway department to pay one-half the cost of installation.

If, on account of curvature of the highway, these signals cannot be seen distinctly at 500 ft., yellow lights, constantly flashing, to be erected, operated and maintained, at the beginning of the curve, or, at some point approaching the crossing, by the highway department, the railroad to pay one-half the cost of erection. Similar signals, under a similar arrangement, are to be placed where grades have been separated but where there are sharp curves on the highway approaching the bridge or abutment.

As a part of the report on Highway Crossing Protection A. H. Rudd, Pennsylvania, chairman of the committee, read a paper, a summary of which follows:

The state of Pennsylvania required that highway crossing signals be located to give the greatest visibility, in a horizontal line with the driver's eye, when located at the side of the road. The state wants no obstruction in the highway. In contrast the state of New York has standardized on the horizontal flashing type crossing signal mounted in the center of the highway on each side of the railroad where possible.

The advantages of placing the signal at the center of the highway are: (1) as the driver is on the left of the car the signal is in a more direct line of the eye; (2) obstruction in highway cannot be overlooked forcing drivers to slow down because of turning out to get around; (3) separates traffic into two lanes and prevents cutting around at or near the crossing; but if the driver cuts out to go around he cannot overlook the signal which is in his path.

Among the disadvantages of the center mounting are: (1) the signal is damaged frequently by highway traffic; (2) the signal obstructs the highway at a point which should be clear as the driver should not be confused; (3) marker lights or flood lighting illumination is required in some cases to enable drivers to see the obstruction; (4) for a considerable distance along the highway the signal is directly in line with the driver's eye and the headlights of opposing cars render the signal invisible; (5) it is not in the province of the railroad to obstruct the highway and one railroad has been sued by a driver who ran into the signal so located; (6) excessive cost of widening the street and setting the signal foundation.

The advantages of mounting the signal at the side of the highway are: (1) does not obstruct the highway; (2) does not necessitate widening the highway; (3) is in the same relative position as other warning signs to which the driver looks for information; (4) is not in line of headlight glare from opposing cars; (5) unnecessary to illuminate when train is not approaching.

Disadvantages of mounting the signal at the side of the road are: (1) it may be so far from the traveled part of the road as to be overlooked; (2) an automobile stopping at the right side of the road may obscure the signal from following vehicles; (3) advertising signs are so numerous that people get tired of looking at them, and overlook real signals at right of road.

We need uniformity not only of signals but of their location. Different surroundings and conditions require different mountings at different crossings. Each location should be given special study.

In some cases with highways curving sharply to the right, in spite of interfering lights from opposing automobiles the signals will be best located on the left side. Where the roadway is well illuminated, as in cities, people are accustomed to look in the center of the street for traffic signs which makes that location best suited for crossing signals. On country roads where drivers are accustomed to look to the right side of the road for information, signals should be located on the right of the highway. Location in the center of the street is the best practice to advocate if the street is wide enough and the local authorities will permit.

C. A. Christofferson, Northern Pacific, reported that Minnesota and North Dakota have passed laws that all highway traffic must stop at certain railroad grade crossings and therefore the railroads need not install automatic crossing protection.

Mr. Rudd replied that North Carolina, Virginia and some other states had such laws but that if enforced strictly they would cause a wave of public indignation. On trunk highways, where stops cannot be made without congesting traffic, crossing protection should be provided. B. T. Anderson, Chesapeake & Ohio, said that the Virginia Stop Law was effective for residents of Virginia but that tourists from other states paid little attention to it which illustrates the ineffectiveness of such laws.

Other Reports of Importance

In view of the fact that interlockings are often built and operated at the joint expense of two or more roads the distribution of this expense depends on the number of levers or units required for each road. The Committee on Contracts and Valuation has prepared a unit basis for deciding the distribution of joint charges of ownership, operation and maintenance, which, if adopted, will eliminate numerous controversies. The report explaining the unit value basis was accepted for final presentation at the annual meeting for inclusion in the manual.

The railroads spend hundreds of thousands of dollars each year for primary cells for the operation of automatic signals and, therefore, the new specification, as included in the report of the Committee on Chemicals, should be of assistance not only to the railroads but to the manufacturers as well.

The Committee on Standard Designs submitted drawings for nine new designs including, adjustable lock rod,

mechanical dwarf signal, ladders, etc. Twenty-six revised drawings were also submitted for approval. The standard symbols for signals have been a bit complicated and lacking in variation, therefore the committee prepared for approval an entirely new system of straight line symbols that will greatly simplify signal and interlocking drawings. The new drawings, including the chart of symbols, were approved.

The Committee on Mechanical interlocking presented two detailed specifications, one for I. S. & F. miniature locking for electro-mechanical interlocking machines and the other for the application of electric locks and circuit controllers to mechanical interlocking machines using I. S. & F. locking. These specifications were approved for presentation at the annual meeting for inclusion in the manual.

The advisability of controlling from a central station, all switches at a railway terminal or in non-terminal territory, depends on the character of traffic, the location of the groups of switches and the cost of installation, maintenance and operation. Each specific case requires investigation and study, however the Committee on Signaling Practice has prepared an outline for making a study of such conditions. This report was accepted for presentation at the annual meeting.

H. M. Towne, research engineer, General Electric Company, presented a lengthy discussion explaining the results of recent experiments on lightning protection. Theoretical discussion of the causes of lightning were explained by illustrated lantern slides. Curves were shown to illustrate practical methods of increasing protection by reducing ground resistance with salt, in different kinds of soil. A geographical chart showed the range of electrical storm frequency in all sections of the United States.

Preliminary Report on C. & N. W. Train Control

WASHINGTON, D. C.

THE Interstate Commerce Commission has made public a letter sent by E. H. DeGroot, Jr., director of its Bureau of Signals and Train Control Devices, to Fred W. Sargent, president of the Chicago & North Western, regarding the preliminary inspection of the installation of the two-speed continuous inductive train control device of the General Railway Signal Company on the North Western between Council Bluffs, Iowa, and Missouri Valley, 21 miles, double track. As a result of this inspection, the following criticisms and comments are offered:

1. Complete plans and description of the final installation as it is, should be furnished before final inspection and test.

The track circuit layout plans furnished to our engineers at Council Bluffs, Ia., on June 5, 1925, show that these plans were revised under date of March 7, 1925. At the time these plans were made, it was evidently the intention to use an automatic cut-in and cut-out feature at the beginning and end of train-control territory, based upon local train-control track-current conditions, and the installation was made accordingly. Since these plans were drawn, it appears that it was decided to abandon the automatic features above referred to, and use a manual device instead, as shown by the arrangement of the mechanical clutch and key-token used in the demonstration of June 11, 1925.

2. While no interference from foreign current influence was reported and none observed during the inspection other than a momentary flicker of the primary relay while passing over, or near, a turn-out switch and certain insulated track joints in the vicinity of Council Bluffs depot, in non-equipped territory, nevertheless the current used for this installation is that of commercial frequency, and since stray current of this frequency, should it flow toward the locomotive from in front, in one rail, and away from the locomotive, in the opposite direction, in the other rail, might cause serious trouble, notwithstanding the fact that both your representative and those of the train-control company state that they do not believe any such set-up is at all probable, nevertheless the matter is discussed here, inasmuch as it would be necessary, should such trouble develop, at once to employ adequate means for overcoming it.

When operating under low speed restrictions, should there occur a false clear energization of the primary relay, there might result under certain circumstances the cancelling of whatever distance had been recorded by the operation of the cam, and the distance to the acknowledging point automatically would be extended in proportion to the distance cancelled by this false clear energization of the primary relay.

3. It is suggested that very careful consideration be given to the question whether or not greater efficiency, and possibly safety, can be secured by the installation of continuous cab indications, which it is our understanding could be provided by connecting two wires, with the installation of two electric light bulbs, with the necessary lenses, in the existing housing.

An analysis of this installation indicates that the locations of fixed signals are not considered as stop indication points and that the device is applied in a manner to simulate an installation wherein fixed signals are not provided. That is, it is apparently the idea to demonstrate the feasibility of installing automatic train-control without working wayside signals.

The observations made indicate that the use of continuous visual cab signals would be of material benefit to the enginemen, for the reason that a change of conditions of locomotive apparatus would thereby be recorded by a distinctive indication in conformity with such condition at the time the change occurred. As now installed and operated, a change in the condition of the locomotive apparatus, when running under the low speed limit, may not be indicated until the train has moved a distance varying from a minimum of approximately one-quarter of a mile to a maximum of approximately one-half mile, at which time the first intimation that a change in locomotive apparatus has occurred is the sounding of the acknowledging warning whistle.

There are a number of conditions under which the use of continuous cab indications would seem to be much more desirable than the present arrangement. As a specific example: assume that a train is moving in a clear block at a speed below the low limit and that a switch is open in that block in advance; under such conditions the low speed limit would be imposed upon the advancing train, but no cab indication would result until the train had moved a distance of approximately one-quarter of a mile, at which time the acknowledging warning whistle would sound. It would seem to be better practice to indicate the change in track and locomotive conditions by the use of a distinctive visual indication that would become effective without any considerable delay period. This is especially true in view of the fact that restrictive indications of wayside signals may be ignored by the device, and that it may even come about that the device will be used without such signals.

4. Recurrent acknowledgment is provided for in this installation, when for any reason the low speed limit is imposed. Under such conditions the action of a cam initiates an automatic brake application at a distance of approximately one-quarter of a mile after the low speed restriction has been imposed, and under these conditions the train is brought to a stop unless the brake application is forestalled by the act of acknowledging. If the low speed restriction is still in force, reacknowledgment will be required approximately each half-mile thereafter, or until the low speed restriction is removed by the energization of the train-control primary relay.

When the low speed restriction is in effect, a fixed wayside signal indicating caution or stop may be passed without acknowledgment, but, under the low speed limit, acknowledgment being enforced by the cam and governor system of the engine equipment, as described above.

In case of failure of power, or if for any other reason, the train-control wayside circuits are deenergized, while train movements can only be made at speeds below the low speed limit, and recurrent acknowledgment will be enforced at each half-mile, nevertheless if operated below the low speed limit and recurrent acknowledgment is properly made at each half-mile, a train may proceed through the deenergized territory without receiving an automatic brake application.

5. The letters "TC" are illuminated in the cab when the electrical apparatus of the train-control device is in service, although the actuator of the device can be cut out of service without affecting this TC indication. In view of the fact that provision has been made under which the mechanical clutch and key-token, mentioned in paragraph 1 of this letter, are employed to prevent the entrance of the train into train-control territory unless the device is cut in, it would seem that this affords reasonable protection on this score; conductors being instructed not to enter train-control territory unless they personally hold the required token, which cannot be removed from the actuator unless the pneumatic device is cut in.

Atterbury Elected P. R. R. President

General succeeds Rea just as property appears finally to have restored pre-war standards

GENERAL W. W. ATTERBURY was elected president of the Pennsylvania Railroad at a meeting of the board of directors held in Philadelphia on Wednesday. He took office on October 1, succeeding Samuel Rea whose retirement under the pension rules of the company took place at the close of business on September 30. The election of General Atterbury to the presidency of the system was definitely presaged last November when he was elected a stockholders' director and a vice-president of the corporation without specific designation. The office of vice-president of the corporation has only been occupied but a short time in the entire history of the company. Samuel Rea held that position for a period of about 6½ months prior to his becoming president.

Mr. Rea presided at the directors' meeting. He will continue his connection with the company, because besides being on the "Honor Roll" he is a director, and his term as such does not expire until April, 1928. The directors recorded an appreciation of Mr. Rea's extended service with the company, and following adjournment there was presented to him on behalf of his fellow directors and officers a piece of silver plate, made in London in the reign of Charles II. The gift was in recognition of Mr. Rea's interest in old English silver craftsmanship concerning which he is a recognized authority. The appreciation adopted by the board of directors discussed the problems of federal control, recovery after government operation, consolidation, etc., which had confronted the Pennsylvania during Mr. Rea's term of office. In part, the resolution said:

Gen. W. W. Atterbury

Directors' Appreciation

"Fifty-four years ago Samuel Rea, then a rodman doing the bidding of the engineers constructing a part of what has become one of the great railroad systems of the world, today commits to other hands the leadership of its forces and the responsibility of shaping its destinies, which have been his for the past 13 years. . . .

"It is for us to record, upon this day, our personal and official testimony to his skill and fidelity in the great trust in his keeping; his unremitting devotion to the interests of the great property and its owners; the ample justification of the confidence reposed in him, and the regrets inseparable from the termination of his leadership—a leadership so executed in harmony with, and consideration for, his associates as to inspire and assure their lasting regard and affection.

"In the life of this company, each administration has been confronted, from time to time, with difficult problems growing out of the development of the country and the rise and fall of the tide of national prosperity, but his —exceeded in length by only two of his eight predecessors—has virtually been beset by difficulties throughout. Beginning when the country was emerging from a period of financial depression, which had necessitated a policy of restricted expenditure upon the property, the greatest upheaval in history, fittingly known as the World War, shortly ensued, with its extraordinary demands upon many of the resources of this country—upon none more than transportation. . . .

"Mr. Rea has lived to a greater age than any of his predecessors, and today reaches the time appointed by the company for relief from the cares and exactions of daily routine, and receives the reward of freedom.

"An eminent engineer and honored by the profession, an authority in the art of accounting, clear of vision and sound in judgment in the realm of finance, Samuel Rea holds a place as pre-eminent in the science of railroad management as in the affections not merely of those who have been closely associated with him but as well of the army of which he has been the distinguished commander. It is the good fortune of the company, as well as a source of gratification to his fellow directors, that he remains a member of this Board. Released from the exactions of the presidency, may he enjoy many years of health and happiness, and may his usefulness to the company long continue."

Mr. Rea was the ninth president that the Pennsylvania Railroad has had since its organization in April, 1846. Of these, four died in office and four resigned. Mr. Rea is the only one who has lived to the retiring age of 70 years, provided in the pension regulations which were adopted in 1900.

General Atterbury a Mechanical and Transportation Officer

General Atterbury is 59 years of age. He has been associated with the Pennsylvania Railroad for 39 years and as a vice-president for 14 years. He is one of the few railway presidents of this country who have come up

through the mechanical department. He was at one time general superintendent of motive power; since 1903, however, when he was promoted to general manager, his interests have been with the transportation department. A line of promotion through the mechanical department and thence the transportation department to the position of executive would be somewhat out of the ordinary on any road. It is particularly out of the ordinary for the Pennsylvania. It is a noteworthy feature of the Pennsylvania organization that in the selection of officers, speaking generally, the tendency has been to give a certain preference to men trained along civil engineering lines. General Atterbury is an exception.

William Wallace Atterbury was born at New Albany, Ind., on January 31, 1866, and spent his boyhood years in Detroit, Mich. He was graduated from Yale University in 1886 with the degree of Bachelor of Philosophy. He entered the service of the Pennsylvania Railroad on October 11, of the same year as an apprentice in the Altoona shops. From 1889 to 1892, he served as assistant road foreman of engines on various divisions of the Pennsylvania and the Philadelphia, Baltimore & Washington. In 1892, he was promoted to assistant engineer of motive power in the Pennsylvania Company, Northwest System. From 1893 to October 26, 1896, he was master mechanic of the Pennsylvania Company at Fort Wayne, Ind. On the latter date, he was promoted to superintendent of motive power of the Pennsylvania Railroad (Pennsylvania R. R. division) with headquarters at Altoona, and on October 1, 1901, was advanced to the position of general superintendent of motive power of the Pennsylvania Lines East of Pittsburgh and Erie.

General Atterbury's affiliation with the transportation department dates back to January 1, 1903, when he was appointed general manager of the Lines East of Pittsburgh and Erie. On March 24, 1909, he was elected fifth vice-president in charge of transportation and on March 3, 1911, upon a change in the organization, was elected fourth vice-president and a director. The practice of designating the several vice-presidents by number was changed on May 8, 1912, at which time Mr. Atterbury was elected vice-president in charge of operation, his jurisdiction still covering at that time the lines East of Pittsburgh. From May 17, 1916, to June, 1919, he was also president of the American Railway Association.

Recognition of Mr. Atterbury's ability as a transportation officer was particularly signalized by his being requested by Secretary of War Newton D. Baker, shortly after war was declared against Germany, to go to France and assume charge, as director-general of transportation of the American Expeditionary Forces, of the details of organization of the American railway transportation facilities in France. Mr. Atterbury sailed for Europe in August, 1917. On October 5, 1917, he was commissioned a brigadier-general and his appointment as such was confirmed by Congress three days later. General Atterbury returned to the United States on May 31, 1919, after having set up a record of performance for which American railway men have never been called upon to make any apologies. He was made the recipient of the distinguished service medal of the United States, was made a commander of the Legion of Honor by France, a companion of the Most Honorable Order of the Bath by Great Britain, and a commander of the Order of the Crown by Belgium.

Upon the termination of federal control, General Atterbury resumed his duties as vice-president in charge of operation of the Pennsylvania but this time having jurisdiction over the entire system as a result of the creation of the new plan of organizations into regions. He continued in this capacity until November 15, 1924, when he was elected vice-president of the corporation without designation, so that he might act in a more general executive capacity, aiding the president in his administrative duties and acting for the president in his absence. General Atterbury is a member of the American Society of Mechanical Engineers, the American Society of Civil Engineers and the American Philosophical Society. He was given the honorary degree of Master of Arts by Yale University in 1911, and Doctor of Laws by the University of Pennsylvania in 1919.

On Monday evening there will be conferred upon him at the meeting of the American Society of Mechanical Engineers at Altoona, Pa., honorary membership in that association.

Improvement in Pennsylvania Operations

General Atterbury becomes the head of the Pennsylvania at a rather opportune time. During recent months the property seems to have evidenced a remarkable improvement in its operating efficiency and earning power. Thus, the recently issued earnings statement shows for August net railway operating income of $11,473,930, or an increase of about 37 per cent over August a year ago. In July, net operating income was $10,132,982, or nearly twice what it was in July a year ago. July and August, in fact, have been the Pennsylvania's two best months since prior to federal control and the first months in which net operating income has even reached as high as $9,000,000. For the eight months' period this year, net operating income was $59,675,098, an increase of $9,712,447 over the figure for the same period of last year, or about 15 per cent. It bettered by about $9,000,000 also the net operating income for the first eight months of 1923, although in the first eight months of 1923 gross income was over $12,000,000 greater than in the first eight months of this year. In August this year, the Pennsylvania had an operating ratio of 72.8 and a transportation ratio of 33.6, and the officers have every expectation that there will be marked improvement in these averages in September. In August, 1924, the operating ratio was 75.8 and the transportation ratio 36.3. In September, 1924, they were 77.2 and 36.0 respectively.

It is noteworthy that the improvement in Pennsylvania earnings at this time is in spite of marked increases in the expenses for maintenance of way. In the first eight months of 1925, these expenses increased 16½ per cent over the same period last year. The Pennsylvania has been putting in large amounts of rail, ties and ballast, particularly on the west end where maintenance until recently was behind.

Coal Traffic Below Normal

Shippers are beginning to speak more favorably of Pennsylvania service. The Pennsylvania is soliciting traffic more assiduously now than has been the case at any time in a period of several years. The result is that the road is securing an increasing proportion of high grade traffic and is even showing—in spite of motor truck competition—a substantial increase in less-than-carload tonnage. These features are of special importance because of the coal situation. The Pennsylvania serves both union and non-union coal fields and it receives a large tonnage of non-union coal from the Norfolk & Western. In 1923 and 1924, about 38 per cent of the road's total revenue tonnage was bituminous, and about 6 per cent anthracite. The tonnage of bituminous in 1924, however, was 15 per cent less than in 1923. More recently the bituminous tonnage has substantially increased as non-union coal production has increased. It is understood that at the present time about two-thirds of the Pennsylvania coal tonnage is coming from non-union mines. The tonnage is not yet back to normal. Because of the coal situation, the

Pennsylvania is not at the present time moving as much freight as might otherwise be the case. The net ton-miles for the system in July, the latest month for which figures are available, were 14 per cent ahead of those of July last year, to be sure, but 16 per cent less than in July, 1923. The recent improvement in Pennsylvania net earnings is plainly not due to increases in traffic. The Pennsylvania otherwise is reflecting improvement. Of notable interest particularly is its present strong cash position.

Conditions on the Pennsylvania since federal control have not been good. The road suffered severely from federal control due, if nothing more, to the unsympathetic attitude shown towards it by the Railroad Administration. Other roads suffered also from federal control. For some reason, however, the Pennsylvania has had an extremely slow recovery. There need be no particular hesitancy in alluding to this situation because it has been freely admitted by the property's own organization. The situation now, however, seems to be in hand. It is to Mr. Rea's credit that the results had begun to show prior to his leaving office. On the other hand, it is General Atterbury's good fortune to come into office under favorable auspices. He becomes the head of the Pennsylvania under more favorable circumstances than would have been the case only half a year ago.

Probably the most decisive change that has taken place in the Pennsylvania situation is the recent improvement in morale, both on the part of management and men. It is only recently, it would seem, that the campaign to cut expenses and to secure a better understanding of the purposes of the budget has begun to show desired results, and apparently these results have not come without some threat of chopping off of official heads. The path of the employee representation plan, also, has been a difficult one. Thus because of prejudices on the part of the men particularly of the shop crafts; there is also some question as to the extent to which it was fully "sold" to the supervisory staff. The Pennsylvania management had always prided itself on the organization's morale. It has been a source of great chagrin that this morale has suffered as it has for the past few years. On the other hand, it is now a matter of pride that conditions have improved. Of course, no one supposes that the Pennsylvania's improved record for the past few months is the whole story. It is regarded merely as a beginning. General Atterbury, therefore, has the task of carrying on a work just beginning to show results. It is understood that he proposes no changes in the company's policy as it was worked out under President Rea.

Mr. Rea is a man of unusual characteristics, a representative of the best that the American business system has brought forth. He has been named the "grand old man of the Pennsylvania System." Time will tell whether General Atterbury can fit himself into the hearts of the members of his organization as Mr. Rea was able to do. He will be handicapped in so doing in many quarters by the decisive attitude he has taken in his career as a railroad officer towards organized labor in the shops. General Atterbury believes that his employees should be represented by leaders who are also employees of the Pennsylvania System, and not by union officers who are not in the road's employ. There is, of course, much disagreement with this position, and the disagreement is basic because it is the elementary problem of recognition of the union. However, in this world decisiveness in dealings with one's fellow men and a firm position in an argument count greatly. General Atterbury's problem is one of combining this decisiveness with the other factors that assist cooperation and create morale, and the success of his administration will rest on the solution of that problem more than on any other one thing. There will be problems of consolidation, those of getting business, those of motor truck and motor bus competition, and all the rest that confront any railway executive, but the Pennsylvania's peculiar situation seems to be such that the personnel problem outweighs them all.

Preliminary Report on R. F. & P. Train Control

WASHINGTON, D. C.

E. H. DE GROOT, JR., director of the Interstate Commerce Commission's Bureau of Signals and Train Control Devices, has sent a letter to Eppa Hunton, Jr., president of the Richmond, Fredericksburg & Potomac, regarding the preliminary inspection of the installation of the two-speed continuous induction device of the Union Switch & Signal Company on the 20-mile double track section between Richmond, Va., and Doswell, Va. As a result of this inspection, the following criticisms and comments are offered:

1. While no interference from foreign current influence was reported and none observed during the inspection other than a momentary flicker of the cab signal in Richmond Yard, due presumably to passing over an underground wire, the current used for this installation is that of commercial frequency, and since stray currents of this frequency could, under certain circumstances, cause serious trouble, the matter is mentioned here, inasmuch as it would be necessary, should such trouble develop, to employ adequate means for overcoming the difficulty.

2. No provision has been made in this installation for having enginemen acknowledge at succeeding stop-signals.

3. At the time of the inspection, the cut-in section on the southward track at Doswell, Va., and the cut-out section on this track at Tower NA, were not operative irrespective of the position of the signal in advance. As installed, the southward cut-in section at Doswell had been extended north to a point opposite the northward home signal for the interlocking plant, but no provision made for reversing the flow of current in the loop circuit, with the result that if signal 211 was at stop the train control relay on the locomotive picked up to the reverse position, and in this position did not open the circuit of the cut-out relay. It, therefore, was impossible for the device automatically to cut in when signal 211 was at stop.

At the southward cut-out at Tower NA, the installation was found as shown on the plan. However, as no provision was made for reversing the flow of current in the wired loop circuit, the device could cut out of service electrically only when the top arm was either in the caution or in the clear position. Similar features as installed on the northward track were not subject to this criticism.

We have been informed by your representatives that measures were taken to correct these points after the inspection.

Should either the loop circuit or the track circuit, which are depended upon automatically to cut into service the train control apparatus at the entrance to train control territory, become open the device would not cut in automatically. While the wayside and it would doubtless cut in at the next track section that was clear. Should a break occur in certain essential wires on the locomotive, the device would not cut in automatically. Whlie the wayside and cab signals are intended to apprise the enginemen of such failure, this method involves reliance upon the human element, and it is suggested that it be carefully considered with a view to possibly securing increased protection in this regard.

4. While no trouble from freezing was reported or observed on this installation, it is suggested that consideration be given to the location or housing of the pneumatic portion of the device so as to prevent the possibility of failure to function due to freezing.

5. At the time of our inspection, the instruction of enginemen was delegated to those having other duties, with the result that few enginemen were familiar with the device, and unless they were familiar with its operation, they were instructed to run with it cut out of service. It is believed important that careful attention be given to instructing enginemen, and to keeping the apparatus in service, if the best results are to be obtained.

6. At the time of our inspection there were few records available covering train control operation, defects discovered, or repairs made. Adequate provision should be made for keeping accurate daily records of tests and repairs, and also for the making of adequate reports of performance.

General News Department

The American Railway Development Association will hold its next meeting at the Hotel Sherman, Chicago, on Thursday and Friday, December 3 and 4 next. The president of this association is A. Leckie (K. C. S.), Kansas City, Mo.; secretary, A. L. Moorshead (Erie), 50 Church street, New York City.

Railway purchases is to be the subject for discussion at the first fall meeting of the Western Railway Club, which will be held in the Great Northern hotel, Chicago, on Monday evening, October 19. The speakers will be A. G. Turnbull, chief mechanical engineer, Erie, who will represent the user; Frank Reed, vice-president in charge of purchasing, Chicago, Rock Island & Pacific, who will discuss the purchasing of material, and J. G. Stuart, general storekeeper, Chicago, Burlington & Quincy, who will speak on the handling of material.

Campaign to Reduce Accidents 35 Per Cent

The campaign of the Safety Section of the American Railway Association to reduce the number of personal injuries to employees by 35 per cent by the end of 1930, or at the rate of 7 per cent a year during the next five years, was started on September 1. The campaign is designed to stress two particular phases of the safety subject each month. The two causes each month will be specialized in posters and bulletins, and monthly meetings of divisional safety committees will emphasize these accidents.

During September the two subjects considered were the operation of hand brakes and hand and motor cars. October will be devoted to (a) the operation of locomotives, and (b) flying articles and transmission apparatus; November the operation of switches and the use of hand tools. In December the subjects will be, (a) coming in contact with fixed structures and (b) explosives, inflammables and hot and corrosive substances.

Two Collisions

In a collision of fast passenger trains on the Nashville, Chattanooga & St. Louis near Chickamauga, Tenn., on September 24, one passenger was killed and about 30 passengers and four trainmen were injured. Train No. 94, northbound, collided at full speed with No. 95, southbound, and the locomotive and several cars of the northbound train fell down a bank. Press reports say that the southbound train was running in disregard of an order to wait for the northbound at Chickamauga.

In a collision of passenger trains, seven miles east of Thomasville, Ga., on the Atlantic Coast Line, on September 27, two passengers and three employees were killed and the conductor, the engineman and 14 passengers were seriously injured. Both locomotives and several cars were badly wrecked, all the cars except one being of wooden construction. Eastbound train No. 180, running behind time and in disregard of an order to wait at Newark, Ga., collided at full speed with westbound train No. 185.

Roadmasters Elect Officers

The election of officers at the closing session of the roadmasters' convention at Kansas City on September 24 resulted in the selection of the following for the coming year: President, G. W. Morrow, supervisor, New York, New Haven & Hartford, New Haven, Conn.; first vice-president, J. B. Kelly, general roadmaster, Minneapolis, St. Paul & Sault Ste. Marie, Minneapolis, Minn.; second vice-president, J. P. Davis, engineer maintenance of way, Central Indiana, Anderson, Ind.; secretary, T. F. Donahoe, general supervisor of road, Baltimore & Ohio, Pittsburgh, Pa.; treasurer, James Sweeney, supervisor, Chicago & Eastern Illinois, Danville, Ill.; members of the executive committee for four years: C. J. Coon, supervisor, New York Central, Grand Central Terminal, New York; and Earl Crowley, roadmaster, Delaware & Hudson, Oneonta, N. Y.; director for one year, Emmett Keough, assistant engineer maintenance of way, Canadian Pacific, Montreal, Que. Chicago was selected as the place for the next convention. The complete report of the convention, including the reports and papers presented at that meeting, appeared in the *Railway Age* of last week, page 567.

Better Outlook for Canadian Roads

A notable advance in net revenues during the eight months ending August 31 last is announced in Montreal by the Canadian National, the net for that period being the highest of any similar period in the history of the present system, and the improvement was made in spite of a decrease in gross receipts.

For the first eight months of the year the gross receipts were 4.25 per cent, or $6,511,169, below the corresponding figures for 1924, but operating expenses were reduced by $10,968,497, or 7.35 per cent, so that the net position stands at $8,385,692, which is an increase of $4,457,328, or 113.47 per cent, as compared with the first eight months of 1924, and an increase of 65.06 per cent over the figures for the same period of 1923.

The upward movement in gross receipts which was noticeable in the July figures was continued during August, the gross increasing during the latter month by $2,423,702, or 13.23 per cent, over August, 1924. Operating expenses during August, 1925, showed an increase of $418,980, or 2.38 per cent, with the result that the net earnings for the same month were increased by $2,004,722, or 280.90 per cent, as compared with August, 1924.

The summary of results is as follows:

August	1925	1924	Increase Per cent
Operating revenues	$20,747,640	$18,323,938	13.23
Operating expenses	18,029,235	17,610,255	2.38
Net	$2,718,405	$713,683	280.90
Eight months			
Operating revenues	$146,661,997	$153,173,166	*4.25
Operating expenses	138,276,305	149,244,802	*7.35
Net	$8,385,692	$3,928,364	113.47

* Decrease.

With net earnings at the highest figure for any August since 1916 the statement of earnings and expenses of the Canadian Pacific for the month of August this year is regarded as highly satisfactory. Net for the month was $4,181,781, as compared with $3,168,590 in the same month last year. Gross earnings for the month showed an increase of $1,097,027, while operating expenses were higher by $83,836. The decrease in net for the eight months is reduced to $529,934. Gross earnings for the eight months show a decrease of $8,099,699, and working expenses for the same period were cut by $7,569,764. Gross earnings, operating expenses and net are shown in the following for the month of August and the eight months of the current year ending with August:

August	1925	1924	Increase
Gross	$15,421,148	$14,324,121	$1,097,027
Working expenses	11,239,367	11,155,530	83,836
Net	$4,181,781	$3,168,590	$1,013,190
8 Months	1925	1924	Decrease
Gross	$105,765,016	$113,864,715	$8,099,699
Working expenses	90,396,713	97,966,478	7,569,764
Net	$15,368,302	$15,898,236	$529,934

Railway Treasury Officers Association

The nineteenth annual meeting of the Railway Treasury Officers Association was held at Hotel Champlain, Bluff Point, N. Y., on September 8 and 9.

During the past year the association through its various committees has given considerable study to the subject of collection of icing and miscellaneous freight charges in connection with the shipment of packing house and other perishable products. The results of this research were embodied in a report to the annual meeting from the Committee on Collection of Icing Charges.

The subject of Order Bills of Lading and Diversions is one which has occupied the attention of the Railway Treasury Officers Association for some time past. Efforts are being made to have adopted by all interested departments of railroads a comprehensive set of rules covering the handling of bills of lading on a uniform basis. Much difficulty has been experienced in this matter and unified action is being sought through the co-operation of the Railway Treasury Officers Association, the various traffic executives associations, the Freight Station Section and Freight Claim Division of the American Railway Association. It is hoped that the coming year will see a culmination of these efforts in the adoption of uniform rules for the handling of bills of lading. In this connection a paper on "Endorsement of Bills of Lading" was read by J. T. Reid, treasurer of the Atlantic Coast Line.

A paper on "Methods of the Federal Reserve Particularly Interesting to Railway Treasurers" was presented by P. D. Houston, treasurer of the Tennessee Central.

A paper on "The most satisfactory methods of payment of railway dividends and bond interest" was presented by C. K. Cooper, assistant treasurer of the Atchison, Topeka & Santa Fe.

Officers were elected for the ensuing year as follows: President, J. T. Reid, treasurer, Atlantic Coast Line; vice-president, F. L. Koontz, treasurer, Elgin, Joliet & Eastern; second vice-president, Charlton Messick, treasurer, St. Louis Southwestern. L. W. Cox, assistant secretary of the Norfolk & Western, was re-elected secretary and treasurer of the association.

New members of the executive committee include the officers and R. N. Harry, assistant general treasurer, New York Central Lines; H. P. Conner, assistant treasurer, Pennsylvania, and J. A. Yates, general treasurer, Canadian National, were re-elected.

The place for holding the 1926 meeting will be decided at some future time by the executive committee.

A Correction

In the article entitled, "Great Northern Employees' Beautification Campaign," published in the *Railway Age* of September 19, page 534, it was erroneously stated in the caption underneath the illustration that the Dale street shops are in Minneapolis. It should have read St. Paul, to agree with the statement in the first paragraph of the article.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, May 4-7, 1926, New Orleans, La. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—John B. Wright, Westinghouse Air Brake Co. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF ENGINEERS.—H. Almert, 63 E. Adams St., Chicago. Next convention, June, 1926, Philadelphia, Pa.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago. Next meeting, June 1, 1926, Atlantic City, N. J.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Next meeting, October 29-30, 1925, New Orleans, La.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, June 15-18, 1926, Montreal, Quebec, Canada.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—C. H. Shircliffe, Chicago & North Western Ry., Chicago. Annual meeting, October 6, Hotel Statler, St. Louis, Mo.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 292 Madison Ave., New York. Annual convention, October 5-9, 1925, Atlantic City, N. J.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borcherdt, 202 North Hamilton Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating—J. C. Caviston, 30 Vesey St., New York. Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York.

Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents).—W. A. Fairbanks, 30 Vesey St., New York. Next meeting, October 27-29, 1925, Hotel Roosevelt, New Orleans, La.

Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Annual convention, March 9-11, Chicago. Exhibit by National Railway Appliances Association, March 8-11.

Construction and Maintenance Section.—E. H. Fritch.

Electric Section.—E. H. Fritch.

Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y.

Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill.

Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Next convention, October 20-22, 1925, Buffalo, N. Y. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. L. Moorshead, Industrial Engineer, Erie R. R., New York, N. Y. Semi-annual meeting, December 3-4, 1925, Hotel Sherman, Chicago; annual meeting, June 23-25, 1926, Vancouver, B. C.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual convention, March 9-11, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—29 W. 39th St., New York. Regular meetings 1st and 3rd Wednesday in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York. Regional meeting, October 5-7, Altoona, Pa.

AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 10 East Huron St., Chicago, Ill.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—E. J. Stocking, 111 West Washington St., Chicago. Next convention, January 26-28, 1926, Cleveland, Ohio.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, May, 1926, Los Angeles, Calif.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Annual meeting, October 27-30, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—E. J. Fuller, Hunt-Spiller Manufacturing Corporation, South Boston, Mass. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—B. J. Wilson, Pocket List of Railroad Officials, 1428 Lytton Bldg., Chicago. Meeting with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charron St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, 514 East Eighth Street, Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth Street, Los Angeles.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.

CHICAGO CLAIM CONFERENCE, Personal Injury Section.—F. L. Johnson, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, Sherman Hotel, Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next convention, 1926, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—Edwin T. Jackman, 710 W. Lake St., Chicago.

INTERNATIONAL RAILWAY CONGRESS.—Office of Permanent Commission of the Association, 74 rue du Progrès, Brussels, Belgium. General secretary, P. Ghilain. Next session of the Congress, Spain, 1926.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 1809 Capitol Avenue, Omaha, Neb. Annual convention, May 11-14, 1926, Chicago. Exhibit by International Railway Supply Men's, New York.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha Ave., Winona, Minn.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—F. P. Roesch, 1942 McCormick Bldg., Chicago, Ill. Meeting with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next meeting, May 25-28, 1926, Hotel Statler, Buffalo.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

MOBILE TRAFFIC & TRANSPORTATION CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m., on 2nd Thursday of each month, Cawthon Vineyard, Mobile, Ala.

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, 720 Security Bldg., St. Louis, Mo. Next convention, January 28-29, 1926, Hotel Cleveland, Cleveland, Ohio.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Annual convention, October 13-16, 1925, Hotel Mayflower, Washington, D. C.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York. Annual convention, April 28-30, 1926, Charleston, S. C.

NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 825 South Wabash Ave., Chicago. Annual exhibition, March 8-11, Coliseum, Chicago, at convention of American Railway Engineering Association.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Next annual convention, June 8, 1926, Chateau Frontenac, Quebec, Canada.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa. Annual meeting, November, 1925.

RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 20-22, 1925, Chicago.

RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1243, Transportation Building, Chicago.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section).

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, A. R. A.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car. Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—W. R. Mau, Vanadium Alloys Steel Co., Latrobe, Pa.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Exhibit by Railway Equipment Manufacturers' Associtaion.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 226 West Jackson Boulevard, Room 1001, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Block, Chicago, Ill.

Traffic News

Freight Traffic for July and Seven Months

Class I railroads in July handled a freight traffic amounting to 37,800,641,000 net ton miles, according to reports compiled by the Bureau of Railway Economics. This was an increase of 4,759,750,000 net ton miles or 14.4 per cent over the same month last year but a decrease of 717,265,000 net ton miles or 1.9 per cent under July, 1923, and 2,592,218,000 net ton miles or 6.4 per cent below July, 1920.

Freight traffic in the Eastern district showed an increase of 17.0 per cent while in the Southern district there was an increase of 19.1 per cent. The Western district showed an increase of 9.3 per cent.

For the first seven months in 1925 freight traffic amounted to 249,335,046,000 net ton miles, an increase of 5.3 per cent over that of the corresponding period last year but a decrease of 5.6 per cent under that of the corresponding period in 1923. There also was a decrease of three-fifths of one per cent under the same period in 1920. In the Eastern district, an increase for the seven months period of 5.4 per cent compared with the same period last year was reported and in the Southern district there was an increase of 7.7 per cent. The Western district showed an increase of 4.1 per cent.

The daily average movement per freight car in July was 27.7 miles, an increase of 2.2 miles compared with July last year but a decrease of one-tenth of a mile compared with the same month in 1923. The average daily movement per freight car in July this year was an increase of three-tenths of a mile compared with the preceding month.

The average load per freight car in July was 27.3 tons, three-fifths of a ton greater than that for July last year but 1.2 tons below that for the same month in 1923. The average for July was an increase of two-fifths of a ton over that of June this year.

Eastern Freight Rate Investigation

Continued in Chicago

The eastern class rate investigation, I. C. C. Docket 15879, before Commissioner Joseph B. Eastman and Examiner Howard Hosmer, which was conducted at Boston, Mass., on September 14, was continued in Chicago on September 21-25. Shippers testified in opposition to the carriers' petition for an upward revision of rates in official classification territory, stating that they were not asking the commission to make specific reductions but rather would have that matter determined by a cost study. The proposal of the shippers calls for the equalization of inter-territorial and intra-territorial rates which they claim would necessitate the lowering of the overhead rate. C. E. Hochstedler, secretary of the shippers' "steering committee," proposed a progressively decreasing rate scale based on distances. The proposal moves Chicago 200 miles further east and gives it lower freight rates from the East than Grand Rapids, Mich., and Detroit.

E. E. Williamson, a rate statistician of Washington, D. C., suggested a proposal which would adhere to the principle of a class rate level, the same in Central Freight Association territory as in Trunk Line territory, with relatively the same level for the inter-territorial rate. This contemplates the same treatment for rates for the cities west of Chicago as is now applied to rate making for cities east of this point. Under the present percentage basis the rate from cities east of Chicago to the Atlantic seaboard, particularly those cities in the group having a rate approximately 90 per cent of the Chicago-New York rate, is made by deducting from a haulage rate the Chicago terminal charge of 34 cents. The rate for Illinois cities west of Chicago is made by a combination of the haulage rates and the terminal charge. The present Chicago to New York first class rate which includes the terminal charge for freight handling, switching, etc., is $1.42 per 100 lb., as compared with $1.61 proposed by the carriers under a mileage scale, excluding some decreases and some increases made in the short haul or intra-territorial rates.

H. A. Hollopeter, assistant traffic manager of the Indiana State Chamber of Commerce, and Lesley LaCroix, traffic manager of

the Evansville, Ind., Chamber of Commerce, spoke for Indiana shippers. Mr. Hollopeter presented an exhibit showing that rate making for Indiana would be more satisfactory on a reasonable group basis with proper relation to the Chicago-New York through rate than a graduated mileage rate as proposed by the Chicago Association of Commerce.

J. P. Haynes, traffic director of the Chicago Association of Commerce, testified for Chicago shippers, who propose that a graduated mileage scale be adopted, the longer haul taking the proportionally lower rate. Under this there would be no increase in the through long haul rate at the expense of certain short haul business in or between the groups which could stand increases.

Michigan interests testified that they would favor the retention of the present grouping principle rather than an increase in the overhead mileage rate as proposed by the carriers, contending that some decreases and some increases in short hauls to make up the difference would tend only to throw them out of alignment with shippers in other groups. William A. Slater of the traffic department of the Grand Rapids Association of Commerce, testified that if any general change was to be made in the official classification rate structure, Michigan interests would insist upon a rate made upon the short haul basis which would reduce the present rate of 92 cents per 100 lb. to 88 cents per 100 lb. the present rate being made with relation to the Chicago to New York rate.

Canadian Commission Opens Hearing on Western Grain Rates

With the largest array of counsel in four years the Dominion Railway Board on Tuesday of this week opened at Ottawa its hearing of the numerous applications for a recision of its order of September 2 which gave reduced rates on grain and flour westbound from the prairie provinces for export through British Columbia seaports. The main applications are from the Montreal Board of Trade, the Canadian Pacific and the Winnipeg Board of Trade. Those appearing for the sustaining of the order and against the present application are G. G. McGeer, representing the province of British Columbia, and Sydney B. Woods, for the provinces of Alberta and Saskatchewan.

At Tuesday's hearing Eugene Lafleur, appearing for the Montreal Board of Trade, arguing for the recision of the order, said that there was no power in the two members of the Board who made the order—Chief Commissioner H. A. McKeown and Commissioner Frank Oliver—to render that judgment. In view of the Order in Council passed near the end of the last session of Parliament, on which was passed the instructions to the Board through legislation and which called for a general investigation of the whole rate structure of the Dominion Mr. Lafleur contended that the order issued on September 2 last was in violation of the spirit and letter of the instructions given by the federal Cabinet.

On July 9, in pursuance of the instructions of the Cabinet, the Board, said Mr. Lafleur, itself and unanimously issued an invitation to the shippers of Canada, collectively and individually, to make any new submissions they might choose on freight rates and intimated, he said, that consideration of individual inquiries or complaints on purely local or sectional questions would be suspended by the Board until the general situation was dealt with. The September 2 order, said Mr. Lafleur, was in violation of both the spirit and letter of the Board's own announcement of July 9. As the Pacific rates order of September 2 affected the whole rate structure of Canada it should, he argued, be held in abeyance until the situation as a whole was investigated.

Premier J. B. M. Baxter of New Brunswick, appearing on behalf of his province, asked that the September 2 order be held in abeyance until the Maritime provinces had their case completed by the expert now at work, and he also argued that New Brunswick wanted to see that what the Railway Board did for British Columbia would not preclude the Board from giving similar special consideration to his province. He concluded with a statement to the effect that if as a result of the September 2 order or any other order of the Board the revenues of the two main railways were reduced below the point of paying the cost of transportation Chairman McKeown himself, said Mr. Baxter, had intimated that some "extraneous means" would have to be adopted to make up the difference or deficit. "Conceivably," added Mr. Baxter, "the only outside means are increased general taxation upon the people of the Dominion or a reduction by the two main railways of the wages paid to their employees. There are no other alternatives for meeting such a situation by outside means."

At this juncture Commissioner Frank Oliver asked Premier Baxter, "In what material regard is your province prejudiced by the order of the Board complained of?" Premier Baxter, in reply, said he was not armed with the statistical information necessary to answer that question in detail. "Then you do not know whether you are hurt or not?" queried Mr. Oliver. "Of course, we are hurt," said Mr. Baxter, "when the Cabinet orders a general investigation, and when the complaint of one province is heard and the door to another is shut." "I know your feelings are hurt," said Mr. Oliver, "but how are you hurt materially?" After Mr. Baxter repeated his argument about higher taxation or lower wages Commissioner Oliver ended the exchange by remarking, "Mr. Baxter has presented his case very effectively and shows that he has absolutely no knowledge of the subject."

Presenting the case of the city of Winnipeg and the Winnipeg Board of Trade for the recision of the Board's order Isaac Pitblado said the order of September 2 was at variance with the principle of all orders of the Board in the matter of rate-fixing. Dealing particularly with the objections of Winnipeg he said they were opposed to the order because by its reducing the westbound grain and flour export rates it would greatly reduce the amount of grain being handled eastward for export through Winnipeg and the head of the Lakes. Commissioner Oliver, interrupting his argument, gave figures showing that in the last four years three or four times the eastbound export grain going through Canadian Atlantic ports passed through United States Atlantic ports. "It is evident, then," added Mr. Oliver, "that millions of bushels now reaching the ocean through United States Atlantic ports could be diverted westward through Vancouver by the rate reductions we ordered on September 2 without prejudicially affecting such Eastern Canadian ports as Montreal, Quebec and St. John."

Others to appear before the Board during the week are: W. N. Tilley and E. P. Flintoft, for the Canadian Pacific; Alistair Fraser, Frank J. Watson and J. E. Dalrymple, for the Canadian National; D. B. Watts, for the Dominion Millers' Association; Thomas Marshall, for the Toronto Board of Trade; and Senator Lynch-Staunton, for the Ontario Department of Agriculture.

Freight Commodity Statistics

The Interstate Commerce Commission has issued a statement showing by districts and by commodities the freight tonnage transported by Class I steam railways for the quarter ended June 30.

The table shows the tonnage transported during the second quarter in 1925, with the corresponding period in 1924, also for the six months ending June 30.

Classes of commodities	Quarter ended June 30, 1925	Quarter ended June 30, 1924	Per cent of increase 1925 over 1924
	Number of tons originated		
Products of agriculture	18,078,420	19,481,051	*7.20
Animals and products	6,046,218	6,383,844	*5.29
Products of mines	168,292,854	148,500,506	13.33
Products of forests	28,105,385	28,193,263	*.31
Manufactures and miscellaneous	73,170,554	64,411,082	13.60
All L. C. L. freight	10,091,985	10,290,033	*1.92
Total	303,785,416	277,259,779	9.57
	Total tons carried		
Products of agriculture	39,434,203	43,223,051	*8.77
Animals and products	10,861,217	11,443,411	*5.09
Products of mines	289,484,693	253,278,586	14.29
Products of forests	55,273,598	54,536,612	1.35
Manufactures and miscellaneous	141,702,453	126,812,713	11.74
All L. C. L. freight	16,762,310	17,264,993	*2.91
Total	553,518,474	506,559,366	9.27
	Number of tons originated		
	Six months ended June 30, 1925	Six months ended June 30, 1924	Per cent of increase 1925 over 1924
Products of agriculture	43,116,184	45,224,833	*4.66
Animals and products	12,542,942	13,200,552	*5.98
Products of mines	306,471,443	291,130,569	5.27
Products of forests	57,168,463	57,775,683	*1.05
Manufactures and miscellaneous	138,193,387	126,257,821	9.45
All L. C. L. freight	19,757,168	20,026,477	*1.34
Total	577,249,587	553,615,935	4.27
	Total tons carried		
Products of agriculture	91,212,301	97,608,039	*6.55
Animals and products	22,150,821	23,169,966	*4.40
Products of mines	547,098,244	514,320,536	6.37
Products of forests	109,821,787	110,849,556	*.93
Manufactures and miscellaneous	267,181,450	247,131,908	8.11
All L. C. L. freight	32,795,165	33,643,951	*2.52
Total	1,070,259,768	1,026,723,056	4.24

*Decrease.

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has ordered cancelled tariffs which were under suspension proposing increased freight rates between Memphis, Tenn., and Cairo, Ill., on the one hand and points in Kansas, Missouri, Nebraska and Colorado on the other hand.

State Commissions

Bus Service Convenient but Not Necessary

The Public Service Commission of New York in a decision handed down last week granting a certificate of convenience and necessity to F. V. Littlefield for a bus line between Corning and Watkins says that while absolute necessity does not exist for the service in this territory it is justified in granting the certificate as greater convenience of the public will be served. "As all of the territory along the proposed route is already served by the New York Central this bus line is probably not a real necessity. However, it would be a great convenience to residents of the towns and hamlets through which it will pass, who trade in either Corning or Watkins and have to consume a whole day in going to and from either place, leaving early in the morning and returning in the evening. The number of such people who would be affected is estimated at about 1,300. The proposed route would also provide additional means of transportation to Watkins Glen, a famous resort which is visited by thousands during the summer months, and would provide the further convenience of carrying passengers directly into the village of Watkins instead of unloading them on top of a hill about 1½ miles away, as in the case of passengers on the railroad."

Court News

Certificate of Convenience and Necessity for Short Extension

The Circuit Court of Appeals, Eighth Circuit, holds that a 1500-foot extension across terminal grounds and four tracks of another road, to a connection with the track of a third road was an extension, for which a certificate of public convenience and necessity by the Interstate Commerce Commission was required by Transportation Act 1920 Sec. 402—18, notwithstanding Sec. 402—22.—Eldorado & Wesson v. Rock Island, 5 Fed. (2d) 420.

Freight and Demurrage Not "Labor" Within Bond of Contractor

The Circuit Court of Appeals, Third Circuit, holds that claims for freight and demurrage on cars of materials consigned to a contractor for public works are not for "labor" within the meaning of the Act of Congress giving a right of action on a contractor's bond for labor and materials supplied. The railroad could refuse to deliver to the contractor until both freight and demurrage were paid.—Mandel v. United States, to use of Wharton & Northern, 4 Fed. (2d) 629.

Completion of Line Held Not Extension Within Transportation Act

The federal district court for eastern Michigan holds that where a line, including a belt line around a city, had been commenced in 1917, completed to a certain point and grading done on part of the belt line prior to May 28, 1920, the project was one undertaking and not an extension or the construction of a new line within Transportation Act 1920, § 402, and no certificate of public convenience and necessity from the Interstate Commerce Commission was required.—Detroit Terminal v. Pennsylvania-Detroit, 4 Fed. (2d) 705.

Labor News

Hearings before the Railroad Labor Board on petitions of the maintenance of way employees of twenty of the larger railroads asking for wage increases of about five cents an hour were begun on October 1. Requests have been submitted *ex parte* by maintenance of way employees of individual roads but the board expects to hear representatives concurrently.

Martin F. Ryan of Kansas City, Mo., was re-elected president of the Brotherhood of Railway Carmen of America at the close of the convention of the Brotherhood in Kansas City on September 23. Frank McKenna of Montreal, Que., and Frank Paquin of Chicago, were elected vice-presidents.

The Railroad Labor Board has requested Ralph Budd, president of the Great Northern to appear before it on October 8 to answer charges that the Great Northern has failed to carry out a labor board order calling for recognition of the Switchmen's Union of North America as representatives of switchmen in the negotiation of a new wage contract. According to the information of the labor board a new contract was negotiated with the Brotherhood of Railroad Trainmen, which has been representing the switchmen on the road. In an election ordered by the labor board the switchmen voted 471 to 439 in favor of the Switchmen's Union, the labor board declares.

Canadian Railway Brotherhood Holds Annual Meeting

At the annual convention of the Canadian Brotherhood of Railway Employees held in Toronto last week President A. R. Mosher in his presidential address stated that if the Canadian National and the Canadian Pacific were to be amalgamated the Dominion government should take over the Canadian Pacific, and assume the responsibility of taking care of wage earners who will be affected by its action. Three hundred and fifty delegates and alternates from 169 divisions attended the convention.

Referring to railway merger proposals Mr. Mosher pointed out that while great care was being taken to suggest that the interests of bondholders in the privately owned undertaking should be protected by government guarantee, no suggestion was forthcoming from those supposed to represent all classes of citizens that railway workers who would be thrown out of work should likewise be protected. Mr. Mosher declared that human welfare should receive first consideration. He claimed that the dominating motive behind each suggestion was the protection and profit for investors.

A proposal that the entire membership of the Brotherhood be affiliated with the Canadian Labor party as a political entity was thrown out. President Mosher explained that the suggestion of political action was in the direction of educational work on social and economic problems so that the individual might exercise the franchise more intelligently. The resolution was later redrafted. The convention adopted without a dissenting voice another resolution to the following effect: "that this brotherhood exercise its influence to have nominated and elected to the federal Parliament such candidates only as will pledge their support to a continuance of public ownership and operation of the Canadian National Railways free from political patronage."

THE BOSTON & MAINE, on September 26, filed with the Interstate Commerce Commission, additional requests for authority to discontinue the operation of trains on branch lines; six lines aggregating 63 miles. On these lines, the company is losing $150,000 a year. The lines are: Reformatory Branch, from Bedford to Reformatory Station, seven miles; Bedford to North Billerica, seven miles; Essex Branch, six miles; Ashburnham Branch, three miles, all in Massachusetts; Kennebunkport Branch, five miles, in Maine; and Rochester to Lakeport, 35 miles, in New Hampshire. Sections of these lines near the terminals named will be retained to continue service to adjacent industries.

The company also desires action on the Lexington branch between North Cambridge, Mass., and Bedford, 10 miles, which line is still being patronized by a considerable number of commutation riders, while other passenger traffic and freight traffic are both very light.

Equipment and Supplies

Locomotives

THE TENNESSEE CENTRAL is inquiring for 4 Mountain type locomotives.

THE ATLANTA & WEST POINT is inquiring for four Mikado type locomotives.

THE DENVER & RIO GRANDE WESTERN contemplates buying 10 locomotives.

THE TENNESSEE COPPER COMPANY has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE AMERICAN RAILWAY OF PORTO RICO has ordered one Consolidation type locomotive from the Baldwin Locomotive Works, Philadelphia.

THE NEW NIQUERO SUGAR COMPANY (CUBA) has ordered one Consolidation type locomotive from the Baldwin Locomotive Works.

THE CHICAGO, SOUTH SHORE & SOUTH BEND has ordered four electric locomotives from the Westinghouse Electric & Manufacturing Company.

THE LOUISVILLE & NASHVILLE has ordered 8 Mountain type locomotives from the Baldwin Locomotive Works. This is in addition to the 24 locomotives which were ordered from the American Locomotive Company and reported in the *Railway Age* of September 26.

THE CHESAPEAKE & OHIO has ordered 20 heavy Mallet type locomotives from the Baldwin Locomotive Works. The authorization for this equipment was reported in the *Railway Age* of September 5. This is in addition to the 50 locomotives ordered from the American Locomotive Company as was reported in the *Railway Age* of September 26.

THE CENTRAL OF NEW JERSEY has purchased from the Ingersoll-Rand Company, the General Electric Company and the American Locomotive Company—which companies co-operate in its manufacture—one 60-ton oil-electric locomotive, the first oil-electric locomotive to be purchased by a railroad in the United States. The locomotive will be delivered in about one week's time and will be used in the New York district.

Freight Cars

THE MONTOUR RAILROAD is inquiring for 500 hopper cars of 55 tons capacity.

THE NEW YORK CENTRAL has received bids on 3,000 box cars.

THE CERRO DE PASCO COPPER COMPANY is inquiring for 40 ore cars of 40 tons' capacity.

THE EQUITABLE EQUIPMENT COMPANY, New Orleans, La., is inquiring for 50 flat cars for export.

THE CHATEAUGAY ORE & IRON COMPANY has ordered 10 steel ore cars of 67 tons' capacity, from the American Car & Foundry Company.

THE BALTIMORE & OHIO has placed orders with the Bethlehem Steel Company for 1,000 all steel box cars and with the Standard Steel Car Company for 500 all steel box cars.

ARMOUR & COMPANY has ordered 300 steel underframes for refrigerator cars from the Bettendorf Company. The inquiry for this equipment was reported in the *Railway Age* of September 26.

THE CHESAPEAKE & OHIO has ordered 100 steel underframe caboose cars from the Standard Tank Car Company. The authorization of this equipment was reported in the *Railway Age* of September 5.

Passenger Cars

THE NEW YORK, NEW HAVEN & HARTFORD has ordered 35 multiple unit cars from the Osgood Bradley Car Company. Inquiry for this equipment was reported in the *Railway Age* of August 8.

THE CHESAPEAKE & OHIO has ordered 10 combination passenger and baggage cars from the Bethlehem Shipbuilding Corporation. The authorization for this equipment was reported in the *Railway Age* of September 5.

THE LOUISVILLE & NASHVILLE has ordered 40 cars for passenger service as follows: From the American Car & Foundry Company, 4 steel coaches, 8 middle smoking room coaches, 4 end smoking room coaches, 2 combination passenger and baggage cars, 2 postal cars, 4 baggage-horse cars and 2 steel dining car shells. From the Pressed Steel Car Company, 10 baggage cars and 4 combina-

LOCOMOTIVES ORDERED, INSTALLED AND RETIRED

Month—1924	Domestic orders reported during month	Installed during month	Aggregate tractive effort	Retired during month	Aggregate tractive effort	Owned at end of month	Aggregate tractive effort	On order first of following month	Building in R. R. shops
July	83	197	10,590,558	113	3,354,456	65,008	2,576,433,377	401	63
August	8	229	12,513,395	166	5,346,176	65,062	2,583,372,980	324	50
September	101	160	7,061,560	151	4,351,378	65,071	2,586,083,994	285	37
October	135	113	5,743,775	220	5,712,633	64,964	2,586,106,026	358	76
November	90	181	8,460,795	263	7,749,794	64,882	2,586,826,278	265	70
December	172	295	12,311,451	304	9,724,426	64,871	2,589,358,971	287	64
Total for year 1924	1,413*	2,246	.....	2,148	.....	.....	.....	...	...
January, 1925	27	167	7,455,971	213	6,242,079	64,824	2,590,525,478	280	81
February	49	125	6,233,494	169	5,118,878	64,779	2,591,618,849	293	77
March	106	138	6,249,721	170	4,888,933	64,747	2,592,979,637	315	83
April	84	171	7,498,252	409	13,126,135	64,509	2,587,347,354	340	82
May	51	147	7,930,840	172	5,329,461	64,484	2,589,912,779	329	80
June	16	179	9,746,100	224	8,296,659	64,435	2,591,286,720	279	66
July	39	139	7,208,534	170	5,602,619	64,420	2,593,971,635	250	59
August	26	147	8,384,262	210	5,866,368	64,357	2,596,489,549	193	45
September	104	...	.....	...	.....	.....	.....	...	...
Total for 6 months	...	927	.....	...	.....	.....	.....	...	...
Total for 7 months	372	...	.....	...	.....	.....	.....	...	...
Total for 8 month	...	1,213	.....	...	.....	.....	.....	...	...
Total for 9 months	502	...	.....	...	.....	.....	.....	...	...

Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops, but not rebuilt equipment.

Figures as to installations and retirements prepared by Car Service Division, A. R. A., published in Form C. S. 56A-1. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. Figures as to orders as given in first column of table are not therefore comparable with figures relating to installations given in succeeding columns.

* Corrected figure.

tion baggage and mail cars. Inquiry for this equipment was reported in the *Railway Age* of September 26.

Iron and Steel

THE ERIE has ordered 250 tons of steel from the Bethlehem Steel Company.

THE CHICAGO, MILWAUKEE & ST. PAUL is inquiring for 200 tons of structural steel.

THE NORFOLK & WESTERN has placed an order for 250 tons of steel for transmission towers.

THE ATLANTIC COAST LINE has ordered 150 tons of steel from the American Bridge Company.

THE ATCHISON, TOPEKA & SANTA FE is expected to enter the market soon for 100,000 tons of rails.

THE FLORIDA EAST COAST has ordered 25,000 tons of rail from the Tennessee Coal, Iron & Railroad Company.

THE LOUISVILLE & NASHVILLE has ordered 72,000 tons of rail from the Tennessee Coal, Iron & Railroad Company.

THE CAROLINA, CLINCHFIELD & OHIO has ordered 6,000 tons of rail from the Tennessee Coal, Iron & Railroad Company.

THE ALABAMA & VICKSBURG and the VICKSBURG, SHREVEPORT & PACIFIC has ordered 6,000 tons of rail from the Tennessee Coal, Iron & Railroad Company.

Machinery and Tools

THE PITTSBURGH RAILWAY COMPANY has ordered one car wheel lathe from the Niles-Bement-Pond Company.

THE ST. LOUIS-SAN FRANCISCO has ordered a combination journal turning axle lathe, from the Niles-Bement-Pond Company.

Signaling

THE TEXAS & PACIFIC has ordered from the General Railway Signal Company, 38 color-light signals for automatic block signaling on its line between Longview Junction, Tex., and Marshall.

THE LOUISVILLE & NASHVILLE is to install automatic block signals on its line between Mobile, Ala., and New Orleans, La., 139 miles, to cost $500,000, the work to be done by railroad forces.

THE BOSTON & ALBANY has ordered from the General Railway Signal Company, an electric interlocking machine, Model 2, for installation at Boylston Street, Boston, Mass.; 70 working levers and 10 spare spaces.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered from the General Railway Signal Company, for use at East Hartford, Conn., 23 electric switch machines, together with cabin apparatus, for non-interlocking operation in the classification yard.

THE PENNSYLVANIA has let a contract to the Union Switch & Signal Company for the installation of electro-pneumatic interlocking at Walbridge, Ohio, the crossing of the Hocking Valley; a 50-lever machine, Model 14, to operate 39 signals, 20 switches and 10 derails. The track circuits will be alternating current, and all signals will be position-light.

THE SOUTHERN has ordered from the General Railway Signal Company, 264 semaphore signals to be erected in the region of Lexington, Ky., Oakdale, Tenn., Tuscaloosa, Ala., and Birmingham, Ala.; also a number of color-light signals to be installed at Mascot, Tenn. These orders include the necessary relays and other apparatus for extensive changes in the automatic signaling of the Queen & Crescent Line.

THE ATCHISON, TOPEKA & SANTA FE has ordered from the General Railway Signal Company, an electric interlocking machine, Model 2, with 41 working levers and 23 spare spaces, for Turner, Kan. This order includes 21 color-light signals of which 18 are dwarf; 22 switch machines, 50 relays and other apparatus. This company also has ordered from the same concern, electric interlocking apparatus for additions to Tower 2 at Stockton, Cal.

Supply Trade News

The Robert W. Hunt Company, engineers, has opened a branch office and cement laboratory in the Alabama Power Company building, Birmingham, Ala. **T. C. Peace** is resident manager.

Joseph T. Ryerson & Son, Chicago, has acquired full rights covering the manufacture and sale of the horizontal drilling and boring machines heretofore manufactured and sold by the Harnischfeger Corporation, Milwaukee, Wis.

G. R. Ingersoll, of the Associated Materials Company, with officers at 935 Schofield building, Cleveland, Ohio, has been appointed representative of the **Morton Manufacturing Company,** Chicago, to handle the sale of this company's products throughout the Cleveland district.

Mason & Stevens, consulting forest engineers, have opened an eastern branch in the Albee building, Washington, D. C., and have taken into partnership, to handle the eastern work, **Donald Bruce,** silviculturist of the U. S. Forest Service, and formerly professor of forest engineering at the University of California.

The Black & Decker Manufacturing Company has removed its Boston, Mass., branch office to new and larger quarters at 62 Brookline street, Boston. This office is in charge of **A. D. Geiger,** recently appointed branch manager of the Boston territory to succeed **D. G. Caywood,** who has been assigned to special work.

The General American Tank Car Corporation, Chicago, has established southern sales offices in New Orleans, La., at 1022 Union Indemnity building, in charge of **Z. R. Simon,** southern sales manager. This company's new plant at Good Hope, La., has been in operation for some time; it is equipped with all modern facilities for overhauling and repairing all types of tank cars.

The Railroad Supply Company, Chicago, manufacturers of tie plates, derailers, highway crossing signals and accessories, has purchased the Bryant Zinc Company, Chicago, manufacturers of highway crossing protection apparatus and signal accessories. There will be no change in the personnel or policy of either company. The business will be conducted as heretofore under the direction of the combined sales and engineering staff of both companies. **A. F. Klink,** president of the Bryant Zinc Company, has retired.

L. C. Sparks, formerly in the engineering and sales departments of the American Car & Foundry Co., in New York and Chicago, has opened an office at 1005 Federal Commercial Trust building, St. Louis, Mo., to handle railway and industrial supplies. He will represent the Standard Coupler Company, New York, and Briggs & Turivas, Inc., Chicago, and will handle electrical specialties. He was in the employ of the American Car & Foundry Co. in the engineering and sales departments at New York and Chicago from March 1, 1901, to September 1, 1925. During the war he served as captain of the Twenty-Fourth Engineers in France from December, 1917, to July, 1919.

V. B. Emrick, has been appointed a representative of the **Locomotive Stoker Company,** with headquarters in Chicago. Mr. Emrick was born at Delphi, Ind., on August 3, 1889, and received his early education in the public schools in Delphi. He later took a course in engineering, after which he entered the employ of the Albuquerque Eastern, at Albuquerque, N. Mex., doing locating work in connection with the building of that road out of Albuquerque. He then went to the Atchison, Topeka & Santa Fe, Coast Lines, as a fireman and later served as an engineman. In December, 1920, he was appointed mechanical expert of the Locomotive Stoker Company, working out of the Chicago office, which position he held at the time of his present appointment in the commercial department.

Railway Construction

BROOKSVILLE & INVERNESS.—The Interstate Commerce Commission has authorized this company to construct a line from a connection with the Tampa Northern at Brooksville, Fla., northerly to a connection with the Seaboard Air Line at or near Holder, a distance of 18.7 miles. The purpose of the new line is to give the S. A. L. a new route into Tampa and the S. A. L. plans to acquire all the new company's capital stock and lease it subject to the approval of the I. C. C. The estimated cost of construction exclusive of equipment is $782,355. Construction must begin by January 1, 1926, and be completed by the end of the year.

GRAND TRUNK.—A contract has been awarded to Hamer Paskins Company, Chicago, for the reconstruction of a bridge over the Clinton river near Romeo, Mich., with three deck plate girder spans of a total length of 147 ft., at a total cost of $40,000.

ILLINOIS CENTRAL.—A contract has been awarded to the W. J. Zitterell Company, Webster City, Ia., for the construction of a freight depot and office building at Madisonville, Ky.

LOS ANGELES UNION STATION.—The Central Development Association of Los Angeles has filed a complaint with the California Railroad Commission against the Southern Pacific, the Atchison, Topeka & Santa Fe and the Union Pacific, asking the commission to order the roads to join in a union passenger station in Los Angeles. The Interstate Commerce Commission recently decided that the California Railroad Commission had power to enforce the building of the union station.

LOUISVILLE & NASHVILLE.—This company will construct a bridge over the Cumberland river at Baxter, Ky. Construction now under way consists of 23.6 miles of second track and grade reduction work on its Kentucky division between Winchester, Ky., and Ft. Estill, and includes the elimination of three tunnels, the construction of three single track tunnels and a bridge across the Kentucky river at Ford, Ky., to cost approximately $3,000,000. A contract has been awarded to Boxley Bros. Co., Orange, Va., and work will also be done by company forces. Company forces will construct a 110-ft. truss span bridge on the Martins Fork branch at Neff, Ky., to cost approximately $29,700; a steel viaduct to cost approximately $209,000 in Independence, Ky.; a 110-ft. truss span bridge at Arlington, Tenn., to cost approximately $32,000; a bridge over Little Fork Deer Creek at Humboldt, Tenn., to cost approximately $28,000, and a 90-ft. turntable at Knoxville, Tenn., to cost approximately $41,000. A contract has been awarded to the Gould Contracting Company, Nashville, Tenn., for the construction of a bridge over the Tennessee river at Knoxville, Tenn., consisting of two 205-ft. deck trusses and one 271-ft. through truss span to cost approximately $212,000.

MEXICAN RAILWAY COMPANY, LTD.—B. E. Holloway, general manager of this company, has submitted plans to the directors in London for the construction of a short line railroad between Mexico City, Mex., and Tampico. The proposed line is intended to cut the time between the two cities from 31 hours to 14 hours and reduce freight rates. If the plans are approved the construction of the road will be started from both ends simultaneously and will require three years.

MISSOURI PACIFIC.—This company has awarded a contract to the Eberhardt Construction Company, Salina, Kan., for the construction of a seven-stall enginehouse at Arkansas City, Kan., to cost approximately $32,530. A contract has been awarded to W. P. McGeorge & Co., Pine Bluff, Ark., for the construction of 3-3/10 miles of spur track to Columbia Quarry, Columbia, Ill., to cost approximately $166,400. A contract has been awarded to the Bilhorn Construction Company, St. Louis, Mo., for the construction of a four-mile spur track to Old Ben Mine No. 14 at Zeigler, Ill., to cost approximately $143,000. A contract has been awarded to T. H. Johnson, Sedalia, Mo., for the construction of a street subway at Nevada, Mo., to cost approximately $98,000. A contract has been awarded to the List & Weatherly Construction Company, St. Louis, Mo., for the strengthening of the White river bridge at New Augusta, Ark., to cost approximately $93,000.

PERE MARQUETTE.—This company is making extensions to its Oak yard, Detroit, Mich., with company forces. The estimated cost is $125,000.

READING.—The Philadelphia Grain Elevator Company, a subsidiary of this road, has awarded a contract to the M. A. Long Company, Baltimore, for the construction at Port Richmond, Philadelphia, of a grain elevator, having capacity of 2,500,000 bu., which will cost $4,000,000. Work will begin within two weeks and the entire elevator and storage annex are expected to be in operation within 18 months. It will be constructed of reinforced concrete and is capable of expansion to a capacity of 5,000,000 bu. More than 400,000 bags of cement and 480,000 lineal feet of piling will be used in construction. The completed elevator plant will consist of a workhouse, equipped with automatic grain car unloading machines, elevator, conveyors, grain cleaning and seperating machines, storage annex, grain driers, shipping pier with conveyor gallery crossing the Port Richmond yard and containing six 36-in. belt conveyors on which grain will be handled from the elevator to the grain shipping pier. The main storage space will consist of 110 cylindrical bins, each having a capacity of 15,000 bu. There also will be 86 bins located between the cylindrical bins in which may be stored about 350,000 bu. The workhouse will have a storage capacity of approximately 500,000 bu. Adjacent to the workhouse a train shed will be erected in which two automatic grain car unloaders will be installed. The car unloaders are designed to handle eight cars an hour each, unloading grain at the rate of 20,000 bu. an hour. Provision is being made for an additional car unloader to be installed at a future date. In connection with each car unloader a 25,000 bu.-an-hour belt conveyor will carry the grain to three elevators in the workhouse. As the grain leaves the elevator it will be discharged into scales each of which will weigh one carload at one operation. Eleven scales are to be installed to be used for weighing grain as it is received at the elevator and six to be for weighing before delivery on vessels. The elevator was designed by the Fegles Construction Company, Ltd., of Minneapolis, Minn., under the supervision of Samuel T. Wagner, chief engineer, and F. Jasperson, assistant chief engineer, of the Philadelphia Grain Elevator Company.

SACRAMENTO NORTHERN.—This company has applied to the Interstate Commerce Commission for authority to acquire trackage rights over portions of the San Francisco-Sacramento between West Sacramento and Lisbon, Calif., 8 miles, and to construct 13 miles of line from Lisbon to Reclamation District No. 999.

SOUTHERN PACIFIC.—If the Interstate Commerce Commission approves of the acquisition of substantial interests in the Nevada-California-Oregon and the Oregon, California & Eastern, it is planned to extend the Southern Pacific line southward from Malin, Ore., and Merrill to Cornell, Cal. This company also will broad gage the entire line of the Nevada-California-Oregon into Lakeview and south to Wendel, Cal. Authority will be asked for the creation of a line through from Klamath Falls, Ore., to connect with the Central Pacific, thereby giving a direct route to Ogden, Utah, which will avoid the present lumber haul through Weed. If applications are approved, terminals for the district will be located at Klamath Falls.

SOUTHERN PACIFIC.—Bids will soon be requested for grading and structures in connection with the change of line on the main line of the Galveston, Harrisburg & San Antonio, between Langtry, Tex., and Osman. The new line will be 9.36 miles in length, replacing 13.84 miles of the present track. Two passing tracks each of 3,000 ft. length, will be constructed, together with station facilities and yard tracks replacing the present station at Langtry. The construction involves approximately 675,000 cu. yd. of embankment. With the exception of one girder bridge with concrete abutments over a highway, there will be no bridges on the new line, the drainage being provided for by small pipes and reinforced concrete box culverts. The cost of the entire work, including track, station buildings, water and fuel oil facilities and signals, is estimated at approximately $1,000,000.

WACO, BEAUMONT, TRINITY & SABINE.—This company has applied to the Interstate Commerce Commission for authority for an extension from Weldon to Waco, Tex., 109.3 miles.

WESTERN PACIFIC.—This company plans to extend its line from Stockton, Cal., to Lodi, a distance of 12 miles.

Railway Financial News

BOSTON & MAINE.—*Reorganization Plan Approved.*—Stockholders at the special meeting of the Boston & Maine in Boston on September 23, approved by a vote of 557,416 to 3,335 the proposed reorganization plan. Related details were approved by a similar vote, including a change in the by-laws of the company whereby the executive committee may elect its own chairman and otherwise have more power. Details of the plan were given in the *Railway Age* of April 4, 1925, and as amended in the *Railway Age* of September 5, 1925. It was announced at the meeting that the syndicate which has been formed by Kidder, Peabody & Co., Lee, Higginson & Co., and Harris, Forbes & Co., has agreed to establish a loan fund of $500,000 for the benefit of small stockholders who assent to the plan, but are not financially able at present to take up their new stock. Loans from this fund will be available at nominal rates of interest. The plan provides that no payment shall be made to the underwriters nor to the co-operating firms, until practically all the stocks and all the bonds involved in the proposed extension, are deposited under the plan. The payment then is to be limited to 3½ per cent of the value of the new prior preference stock.

Changes in Plan Underwriting.—The plan dated September 1 stated: "The old shares surrendered by stockholders who elect not to purchase new shares will be turned over to the underwriters for their compensation and they will also receive a cash commission." It is now provided that such shares be held by the readjustment committee for account of the railroad, and the proceeds of such stock when sold by the committee will be paid to the railroad to make up for the discount from par on any prior preference stock turned over to underwriters. Proceeds of stock not necessary for making up this difference may be used by the railroad for paying the bankers for services rendered by them.

Abandonment.—The Boston & Maine has filed with the Interstate Commerce Commission six additional applications for authority to abandon branch lines in accordance with its comprehensive plan to reduce the proportion of unprofitable mileage. These applications covered the Ashburnham branch, from Ashburnham to South Ashburnham, Mass., 2¾ miles; the Reformatory branch, from Bedford to Reformatory, Mass., 7 miles; the Kennebunkport branch, from Kennebunk to Kennebunkport, Me., 4½ miles; the Lakeport branch, from Rochester to Lakeport, N. H., 35 miles; the Lexington branch, from Bedford to North Billerica, Mass., 8 miles; and the Essex branch, from Hamilton to Conomo, Mass., 6 miles.

BUFFALO, ROCHESTER & PITTSBURGH.—*Bonds.*—The Interstate Commerce Commission has granted authority to procure authentication and delivery of not exceeding $1,186,000 consolidated mortgage 4½ per cent bonds to be held subject to the commission's further order.

CENTRAL NEW ENGLAND.—*Tentative Valuation Made Final.*—The Interstate Commerce Commission has issued an order declaring final its tentative valuation of this company's property as of June 30, 1916, because the carrier's protest was not filed within the statutory period of 30 days and a later motion to have the commission accept the protest as duly filed was denied. The report finds the final value for rate-making purposes of the property owned and used for common carrier purposes as of valuation date to be $13,812,880.

DENVER & RIO GRANDE WESTERN.—*Passes Bond Interest.*—The directors decided Wednesday that payment of interest for the period from February 1, 1925, to August 1, 1925, on the general mortgage bonds of the company would not be consistent with due regard for the protection of the property and maintenance of efficient service thereon. In view of this no interest will be paid on these bonds when due November 1.

GRAND CANYON.—*Tentative Valuation.*—The Interstate Commerce Commission has served a tentative valuation report as of June 30, 1916, in which the final value for rate-making purposes of the property owned and used for common-carrier purposes is placed at $1,073,925.

ILLINOIS CENTRAL.—*To Issue Stock.*—Directors meeting in New York on September 30 authorized the issuance of additional 6 per cent preferred stock. Each holder of common stock will have the right to subscribe at par for the new preferred up to 10 per cent of the amount of common held in his name at the close of business on October 22. Payment in full for the new shares will be due at the company's offices on or before December 10. The stockholders granted the directors authority on April 19, 1922, to issue $50,000,000 preferred stock, the present issue being the third under this authorization. At present $22,000,000 has been issued, but $2,000,000 has been converted into common stock, leaving the new preferred now outstanding at $20,000,000.

JACKSON & EASTERN.—*Bonds.*—The Interstate Commerce Commission has authorized the issuance of $60,000 five-year 6 per cent first mortgage bonds to be sold at par, the proceeds to be used for the construction of extensions.

KANAWHA & MICHIGAN.—*Tentative Valuation.*—The Interstate Commerce Commission has served a tentative valuation report as of June 30, 1918, in which the final value for rate-making purposes is placed at $14,711,881 for the property owned and $15,088,604 for the property used.

KANSAS CITY NORTHWESTERN.—*Application Denied.*—The Interstate Commerce Commission has issued a decision denying an application of the Kansas City Northwestern Railway Company to take over the railway hitherto owned by the Kansas City Northwestern Railroad Company, but not operated since December 1, 1919. The new company was recently denied the grant of a loan, and an application for the abandonment of the mileage totaling 162 miles is now pending, as was reported in the *Railway Age* of September 5.

KENTUCKY & INDIANA TERMINAL.—*Bonds.*—The Interstate Commerce Commission has authorized this company to sell $250,000 first mortgage 4½ per cent bonds now held in the company's treasury to J. P. Morgan & Co., at 85 per cent of par. The proceeds are to be used for extensions of yard tracks and for shop machinery. Authority was also granted to the Chicago, Indianapolis & Louisville, the Southern and the Baltimore & Ohio, the proprietor companies, to assume obligation as guarantors of the bonds.

MONROE & TEXAS.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line between Alpena and Lenwil, La., 3.25 miles.

NEW YORK, CHICAGO & ST. LOUIS.—*First Stage of Unification Hearing Concluded.*—The first stage of the hearings on the application to the Interstate Commerce Commission for authority for the unification of the New York, Chicago & St. Louis, Chesapeake & Ohio, Erie and Pere Marquette, before Commissioner Meyer and Director Mahaffie of the commission's Bureau of Finance, was concluded on September 30, when cross-examination of the final witness for the Nickel Plate by counsel for the protesting minority stockholders was completed and W. A. Colston, vice-president and general counsel of the Nickel Plate, announced that the applicant rested its case. An adjournment was then taken to October 7, when protestants were to introduce their witnesses in opposition to the application. H. W. Anderson, counsel for minority stockholders of the Chesapeake & Ohio, announced that he desired to call as witnesses W. J. Harahan, president of the Chesapeake & Ohio; F. D. Underwood, president of the Erie; F. H. Alfred, president of the Pere Marquette, and the directors of those roads that had voted for the Van Sweringen unification proposal. It was arranged that Mr. Harahan should appear on October 7, to be followed by the C. & O. directors, for whom subpoenas will be issued if they are not willing to appear voluntarily, and later by the others. It was also agreed that argument on the motion of the protestants to dismiss the application should be combined with the final argument in the case. It has been stated that the protestants expect to occupy about two weeks with their witnesses, after which probably 30 days would be allowed for the filing of briefs before arguments are heard by the full commission. On September 28 O. P. Van Sweringen was recalled for further cross-examination. The questions dealt with a large amount of documentary material furnished to counsel since Mr. Van Sweringen's previous testimony and went into details regarding the contracts and other arrangements between the various companies in connection with the plans for the Cleveland union

terminal, the bank loans obtained by the Van Sweringens for the purchase of railroad stocks and the transfer of Chesapeake & Ohio funds to J. P. Morgan & Co., and other banks from which the Van Sweringens were borrowing money. On September 29 H. C. Royal, of Ernst & Ernst, was recalled for further questioning regarding his accounting exhibits, which was brought to a close on September 30.

NEW YORK, NEW HAVEN AND HARTFORD.—*Asks Modification of Federal Decree.*—The New York, New Haven & Hartford has filed in the United States District Court at New York a petition asking for a modification of the so-called "federal decree." The following statement has been issued relative thereto:

"The New York, New Haven & Hartford, as a further step in the effort to rehabilitate itself and co-ordinate its transportation facilities, has filed a petition in the District Court for the Southern District of New York asking for a modification of the decree in the federal suit which in October, 1914, placed in the hands of trustees the Connecticut and Rhode Island trolleys and its investment in the stock of the Boston & Maine. The decree also directed the sale of the New Haven's interest in the stock and bonds of the Eastern Steamship Corporation and the stock of the New York and western Massachusetts trolleys, and of the notes of the New England Investment & Security Company. The decree withheld action with respect to the other steamship lines pending the decision of the Interstate Commerce Commission as to whether such lines might be held by the New Haven under the provisions of the Panama Canal Act.

"The petition which was filed today recites that by a modification in June 1923, the stock of the Boston & Maine was returned to the Boston Railroad Holding Company, a Massachusetts corporation controlled by the New Haven; that the Rhode Island trolleys were sold under receivership in September, 1920; that in obedience to the decree, all of the stock and bonds of the Eastern Steamship Corporation have been sold. As to the New York trolleys the petition recites that the Westchester Street Railroad Company is now advertised for sale under receivership; that the Shore Line Electric Railroad Company has been abandoned and the operation thereof has ceased; that the New York & Stamford Railway Company ought to be retained to provide for the development of future suburban traffic into and out of New York City in connection with the New York, Westchester & Boston. As to the western Massachusetts trolleys the petition recites that roadway and structures of a book value of $4,300,000 have been abandoned because non-paying; that the New Haven is now engaged in rehabilitating the remaining parts, particularly Pittsfield, North Adams and Bennington properties, and that it ought not to be asked to put money into these properties for the purpose of rehabilitating them if it continues to be under the obligation to sell them. As to the New England Investment & Security Company notes the petition recites that they are in default as to both principal and interest and have been in default since 1915. Steps are being taken to reorganize the finances of the New England Investment & Security Company. The petition states that the New Haven in order to obtain for its stockholders the greatest benefits from such reorganization ought to be in position where it is no longer required to sell these notes within a specified time.

"The petition further states that the Interstate Commerce Commission has granted the New Haven the authority to retain control of its sound lines. As to The Connecticut Company, the petition recites that the property is not now and never has been one engaged in interstate commerce. That its business is not substantially competitive with that of the New Haven; that the Public Utilities Commission of Connecticut has recommended to the general assembly that the property should be returned to the New Haven; that modern methods of transportation dictate the desirability of co-ordinating motor coaches, trolleys and steam railroad operation in order to give the service which the public requires; that to this end it is economical and desirable that the Connecticut Company and the New Haven should pool their resources and their methods of operation; that moreover the future financing of the Connecticut Company will require the help of the New Haven which cannot be expected if it is required to be sold and permanently taken from its control. This is in line with the New Haven's recently announced policy of operating motor coaches through its subsidiary the New England Transportation Company, and is further evidence of the determination on its part to use all modern methods of transportation in giving adequate service to the public.

"The petition states further that none of said securities could have been sold during the 11 years duration of the decree without a disastrous and unwarranted sacrifice of the interest of the New Haven stockholders. It quotes the opinion of Judge Mayer who directed the return of the Boston & Maine stock in June, 1923, as follows:

"'There recently has come a change because it seems that there must be co-operation, united effort and sensible companionship, all looking towards capable operation of the great railroad properties and the installing of methods and devices which shall make for economy.'

"It is expected that an early date will be set for a hearing at which time testimony will be offered by the New Haven in support of the allegations in the petition. When the decree was entered it contained a clause permitting either party to ask for further modification, and it will be the contention of the New Haven that the time has arrived when by reason of changed conditions, the decree should be modified so that it will resume control of the remaining securities ordered sold under the decree."

PENNSYLVANIA.—*No Security Issues Planned.*—President Samuel Rea has issued the following statement:

"While it is gratifying that the newspapers continue to discuss the sale of large amounts of capital stock of the Pennsylvania Railroad, may I repeat, on behalf of the company, that unless some emergency arises, which cannot now be foreseen, it will not be necessary to issue and sell any new securities this year, and probably none throughout the year 1926. The earnings and cash position of the company at present are excellent."

READER RAILROAD.—*Authorized to Operate Line.*—The Interstate Commerce Commission has given this company a certificate to operate in interstate commerce a line of railroad extending from a connection with the Missouri Pacific at Reader, Ark., and thence southwest for a distance of approximately 23.5 miles in Ouachita and Nevada counties, Arkansas. The line was built by the Mansfield Hardwood Lumber Company which will hold its stock. Permission to retain excess earnings was denied.

SEABOARD AIR LINE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to sell $10,000,000 of first and consolidated mortgage bonds to Dillon, Read & Co., and Ladenburg, Thalmann & Co., at 92.25.

Acquisition.—The Seaboard Air Line has applied to the Interstate Commerce Commission for authority to acquire control of the Charlotte Harbor & Northern by acquisition of its stock owned by the American Agricultural Chemical Company and by lease.

ST. LOUIS & HANNIBAL.—*Bonds.*—The Interstate Commerce Commission has granted authority to issue not exceeding $650,000 first mortgage 6 per cent bonds, $250,000 to be used in satisfaction of advances to John Ringling and $400,000 to be sold at par and proceeds used for capital purposes. The company also desired authority to issue $250,000 of bonds to be used in conversion of preferred stock. This part of the application was denied.

SAN ANTONIO & ARANSAS PASS.—*Tentative Valuation.*—The Interstate Commerce Commission has served a tentative valuation report as of June 30, 1919, in which the final value for rate-making purposes is placed at $17,396,228 for the property owned and $17,402,723 for the property used.

SYLVANIA CENTRAL.—*Final Value.*—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes as of June 30, 1915, to be $150,882.

VIRGINIAN.—*Bonds.*—The Interstate Commerce Commission has granted authority to procure authentication and delivery of $3,896,000 first mortgage 5 per cent 50-year bonds, and to sell $7,500,000 first mortgage, 5 per cent 50-year bonds at not less than 95½ and accrued interest to the National City Company and Lee, Higginson & Co.

WABASH.—*Acquisition.*—Hearing on the application of this company for authority to acquire control of the Ann Arbor by purchase of its stock was held before Examiner Davis of the Interstate Commerce Commission on September 23.

WHEELING & LAKE ERIE.—*Bonds.*—The Interstate Commerce Commission has granted authority to this company to issue $1,650,000 5 per cent refunding mortgage bonds, Series B, to be sold at not less than 85 per cent of par and accrued interest. Pending the sale of the bonds, they may be pledged as collateral security for a short term note of not less than $1,000,000.

Dividends Declared

Carolina, Clinchfield & Ohio.—Common, ¾ per cent, quarterly; stamped certificates, 1¼ per cent, quarterly; both payable October 10 to holders of record September 30.

Delaware, Lackawanna & Western.—$1.50, quarterly, payable October 20 to holders of record October 3.

Meadville Conneaut Lake & Linesville.—2 per cent, payable October 1 to holders of record September 20.

Midland Valley.—$1.25, payable October 15 to holders of record September 30.

Missouri-Kansas-Texas.—Preferred A, 1¾ per cent quarterly, payable November 2 to holders of record October 15.

New London Northern.—2¼ per cent, quarterly, payable October 1 to holders of record September 16.

Norfolk & Western.—Adj. preferred, 1 per cent, quarterly, payable November 19 to holders of record October 31.

Northern Railroad of New Hampshire.—1½ per cent, quarterly, payable October 1 to holders of record September 14.

Trend of Railway Stock and Bond Prices

	Sept. 29	Last Week	Last Year
Average price of 20 representative railway stocks	87.61	88.00	71.23
Average price of 20 representative railway bonds	91.82	91.68	88.37

Railway Officers

Executive

F. H. McGuigan, assistant to president of the Railway Car Manufacturers Association, New York, and formerly regional engineer of the United States Railroad Administration at Chicago in charge of western lines, has been appointed engineering assistant to the executive vice-president of the Gulf Coast Lines, with headquarters at Houston, Tex.

Operating

Martin W. Clement, who has been promoted to assistant vice-president in charge of operation of the Pennsylvania, was born on December 5, 1881, at Sunbury, Pa., and was educated at Trinity College, Hartford, Conn. He entered the service of the Pennsylvania on August 1, 1901, as a rodman in the office of the principal assistant engineer of the United Railroads of New Jersey. He served successively as transitman and assistant supervisor, and on January 1, 1910, was promoted to supervisor in the office of the general manager. On June 16, 1913, Mr. Clement was transferred to the Manhattan division, and on December 1, 1913, he was transferred to the Pittsburgh division, to act in the same capacity. On December 1, 1914, he was transferred to the New York, Philadelphia & Norfolk, as division engineer, and on August 8, 1916, he returned to the Pennsylvania as division engineer to study improvements in and around New York. He became division engineer under the principal assistant engineer of the New Jersey division on November 15, 1916, and on June 16, 1917, was appointed superintendent of the New York, Philadelphia & Norfolk. He was promoted to superintendent of freight transportation of the Pennsylvania, Lines East, on September 1, 1918, with headquarters at Philadelphia. Mr. Clement was appointed acting superintendent of passenger transportation, with headquarters at Philadelphia, Pa., on January 1, 1919, and on March 1, 1920, when federal control terminated and the Pennsylvania was reorganized, Mr. Clement was appointed general superintendent of the Lake division, with headquarters at Cleveland, Ohio. On March 1, 1923, he was promoted to general manager of the Central region, with headquarters at Pittsburgh, Pa., which position he held at the time of his recent promotion to assistant vice-president in charge of operation.

M. W. Clement

L. A. David, superintendent of the St. Louis terminals of the Missouri Pacific, with headquarters at St. Louis, Mo., has been promoted to general superintendent of the Eastern district, with the same headquarters, succeeding **J. L. Kendall,** who has been appointed superintendent of the Joplin district, with headquarters at Nevada, Mo. He succeeds **W. C. Bevington,** who has been appointed general agent, with headquarters at Nevada, and with jurisdiction over southeastern Kansas and southwestern Missouri. **C. A. Clements,** superintendent of the Kansas City terminals, with headquarters at Kansas City, Mo., has been transferred to the St. Louis terminals in place of Mr. David. **F. T. Mahoney,** terminal trainmaster at Little Rock, Ark., has been promoted to superintendent of the Kansas City terminals, with headquarters at Kansas City, succeeding Mr. Clements. **A. B. Kelley,** inspector of transportation, with headquarters at St. Louis, Mo., has been promoted to terminal trainmaster at Little Rock in place of Mr. Mahoney.

Traffic

A. P. Gilbert has been promoted to freight traffic manager of the Chesapeake & Ohio, with headquarters at Richmond, Va. **William Fitzgerald** has been promoted to general freight agent, also with headquarters at Richmond, and **R. H. Vaughan** has been promoted to general through freight agent (in charge of through freight traffic solicitation and service), with headquarters at Cincinnati, Ohio.

E. D. Hotchkiss, freight traffic manager of the Chesapeake & Ohio, with headquarters at Richmond, Va., has retired after 52 years of continuous service. He was born on April 23, 1850, and entered railway service in 1867, and until March, 1868, he was brakeman on a switching train for the Lackawanna & Bloomsburg (Delaware, Lackawanna & Western), at Kingston, Pa. In March, 1868, he became a clerk in the freight accounting department, and from September, 1868, until September, 1870, he was clerk to the master mechanic. From September, 1870, to July, 1873, he was superintendent's clerk and acting paymaster for the same road, and on September 1, 1873, became clerk to the general freight agent of the Chesapeake & Ohio. This position he held until January 1, 1879, when he became freight claim agent for the same road. On January 1, 1887, he became general freight agent of the Eastern division of the Newport News & Mississippi Valley (Chesapeake & Ohio), and in September, 1888, he became general freight agent for the Chesapeake & Ohio. In January, 1916, he was promoted to freight traffic manager, which position he held when he retired.

Mechanical

F. B. Moss has been appointed master mechanic of the Richmond division of the Chesapeake & Ohio, with headquarters at Richmond, Va., succeeding M. Flanagan. **R. G. McKee** has been appointed master mechanic of the Chicago division, with headquarters at Peru, Ind., succeeding E. R. Woody, who has been transferred to another point and assigned to other duties.

Special

Leslie H. Tyler, special representative, public relations department, of the New York, New Haven & Hartford, with headquarters at New York, has been transferred in a similar capacity to New Haven, Conn. The New York office will henceforth be in charge of **George S. Wheat.**

Obituary

Carl E. Gosline, track engineer of the Delaware, Lackawanna & Western, with headquarters at Hoboken, N. J., died on September 28.

L. B. Wood, assistant general freight and passenger agent of the Great Northern, whose headquarters were located at Helena, Mont., died on September 26 following a stroke of apoplexy.

Frank Elliot Bell, formerly assistant general passenger agent of the Chicago, Burlington & Quincy, with headquarters in Chicago, died on September 25 in Chicago after a year's illness. He was born on August 8, 1858, in England, and entered railway service in December, 1873, as a messenger for the Chicago, Burlington & Quincy. During his employment with this company he has been a clerk, a chief clerk, a city passenger agent, a general agent passenger department, and assistant general passenger agent. He retired from service in January, 1925.